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The Ohio State University, Ph. D., 1964
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A PROPOSED CORE PROGRAM FOR COLLEGE MEN
IN THE REQUIRED CURRICULUM
OF PHYSICAL EDUCATION

DISSERTATION
Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Robert John Gobin, B.S., M.Ed.

The Ohio State University
1964

Approved by

Advisor
Department of Physical Education
DEDICATION

To my wife, in gratitude for her patience, understanding, and support which made this study possible.
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CHAPTER I
INTRODUCTION

The pressures created by a rapidly advancing culture require new emphasis in educational curricula, methodology, and intensity of programs to fulfill the potentials of complete individual development.¹

Issues in Physical Education

A major factor which influences educational planning in colleges and universities today is growth. There are more people to be educated, more things to learn about, and more ideas to excite the imagination of the student. It is readily apparent that two areas of growth which contribute most to current issues in physical education are identified with (1) the vast quantities of knowledge produced through advances in science and (2) the rapid rate of increase in college enrollments.

Increase in Knowledge

The world today enjoys the mixed blessings that accompany an awakening age of science. Since World War II, ¹

developments in all areas of scientific research have resulted in a virtual explosion in the quantity of knowledge available to man. Oppenheimer² estimates that it now takes just eight to eleven years to double the amount of scientific information that was previously known to man. LePage³ dramatizes the fact still more by observing that between the years 1900 and 1963 the amount of information conveyed to students by colleges and universities has multiplied ten times. It is distressing to note that on the basis of these estimates, the knowledge possessed by a college graduate in this year of 1964 is destined to become obsolete in less than ten years.

The growth of science has produced many advances in knowledge related to the human body, and to movement. Never before has man had such a wealth of information so vital to his welfare. All areas of science appear to have a similar history.

Webster defines science as "accumulated and accepted knowledge systematized and formalized with general truths and laws; any branch or department of systematized knowledge." When considered in these terms, physical education has undergone many changes within the last twenty years.


The basic sciences of anatomy, physiology, and kinesiology have all been expanded and have been joined with the behavioral sciences, such as psychology and sociology, to contribute greatly to the undergirding foundations of physical education. To the extent that all such knowledge is utilized, physical education is a science.

Much of the accumulating scientific knowledge has come either directly from research in physical education or is indirectly related to its subject matter content. New and exciting concepts of motor learning, fitness, training, safety, health, and other areas are available for the enrichment of physical education curricula. A recent national conference report outlines the scope of this research by observing:

Physical education has an identifiable body of knowledge drawn from the sciences and from the humanities; from the laboratory and field studies of its qualified researchers; from the accumulated experiences of its professional personnel; and from the reflective thinking of its philosophers which together interpret the nature of human movement and its effects on the individual and his cultural setting.4

Problems related to knowledge increase

Pressures created by the explosion of knowledge can be broadly classified under two general headings. The first deals with the role physical education will play in changing curricular patterns of institutions of higher learning. A second problem area concerns itself with the pressures created within the discipline of physical education.

In colleges and universities today the evidence of pressures produced by vast amounts of new information are most evident when examining evidence evolving institutional curricula. Attempts to incorporate new material into present crowded curricula have resulted in a forced telescoping of courses, addition of new courses, and increases in several professional curricula from four to five year programs.

As the depth of human knowledge increases so too does the apparent need for specialization. Now, more than ever before, colleges are faced with the problem of establishing a degree of curricular balance. On the one hand there is the recognized need to make full use of, and contribute to the advances of science. On the other hand there is a need for broadening the contribution that the humanities offer for the total education of students.

Present day pressures toward a specialized education are by no means new. The first significant educational
reaction was made roughly forty years ago. At that time the college concept of general education was born. McConnell describes the occasion of the birth as being a reaction against overspecialization and against an imbalance between the pursuit of special interests and the attainment of the broader cultivation that the liberally educated man was traditionally expected to possess. General education has also been described as a reaction against the fragmentation of the curriculum and the disunity of the student's educational experience that inevitably result from a vast increase in specialized knowledge.

General education is a phrase which is currently interpreted to mean a nonspecialized education designed to prepare students for the common life of their time and their kind, a unifying element of the culture. The methods employed are centered around a provision for practice in thinking effectively, knowing where and how to acquire information, and the ability to appraise, relate, and

---


integrate facts to form valid judgments. These traits characterize the common learning desired of all educated college graduates.

The increasing difficulty of finding time in the already crowded curriculum has prompted many universities to appoint study committees for the purpose of reviewing the academic structure of their institutions. The review necessarily includes a thorough study of the content and effectiveness of the institutional general education program. The Ohio State University is numbered among those undergoing a critical self-appraisal for the purpose of enriching programs and re-assessing values.

The pressure of increasing quantities of knowledge has created an undeniable need for each physical education department to re-appraise its role and contribution to institutional general education objectives. To what degree the department prepare students for the common life of their time and their kind: How successfully are students encouraged to think effectively, learn where and how to gain new


information, and acquire the ability to appraise, relate, and integrate facts? The answers provided for these questions ten years ago no longer reflect the needs and interests of the present-day generation of students. New answers must be sought which are based upon the present and future needs of students.

A second issue which has become intensified by the recent explosion of knowledge is related to pressures internal to the field of physical education. There is unanimous agreement in the profession that the medium of physical education is movement. There is general agreement that the objectives of physical education recognize responsibility for educating the whole student: physically, emotionally, socially, and morally.\(^{11}\) The specific content and emphasis has, however, been the subject of a philosophical debate between those who support a physiological, as opposed to a recreational, emphasis in the curriculum. As a consequence of the feud, much consideration of subject material integral to physical education has been eliminated.

The availability of vast amounts of new information related to the field impels physical educators to consider the body of knowledge in a broader scope than is presented by either the physiological or recreational emphasis alone. There is increasing recognition that fitness and skills are

\(^{11}\)Abernathy and Miller, \textit{loc. cit.}
not only desirable outcomes of physical education. One of
the basic shortcomings in testing physical education in the
past has been the failure to utilize the supporting know­
ledge available to the field. Students have been instructed
"how" to achieve fitness and acquire nuromotor skills with­
out understanding "why" or the "benefits" realized in these
areas. 12, 13

The general education programs of physical education
are faced with the same kinds of curricular problems experi­
enced in all institutions of higher learning. There is not
enough time available to keep up with the depth and breth
of the rapidly expanding subject matter content. There are
literally dozens of ways to develop organic fitness through
movement activities. The total number of recreational
games, contests, and individual motor skills to be mastered
nearly exceeds the range of imagination. The potential
knowledge content related to fitness, history, rules,
strategy, and self-appraisal is far greater than the time
available to teach them.

As the quantity of what is known in physical edu­
cation increases, there is a corresponding tendency to nar­
row the educational focus to a limited study pursued in

12Kay H. Peterson, "Tell Them Why," Journal of
Health, Physical Education, and Recreation, XXXIV (March,

13James W. Long et al., Physical Education Syllabus
depth. It is therefore readily seen that the factors which contributed to the development of general education are likewise present in physical education today.

The internal pressures created by a flooding increase in knowledge strongly indicate a pressing need for physical educators to (1) resolve the philosophical dispute by striving for a balance in program content which favors no single objective at the expense of others; (2) strive for greater utilization of recent scientific research designed to enrich student understanding of himself and the relationship between activity and health; and (3) develop a physical education course, within the general education pattern, which would be designed to provide all youth with a common body of experience organized around the individual needs of students.

**Increase in college enrollment**

The second of two growth factors which contribute to current issues in physical education has been identified with the explosive growth in college enrollments. The amount of this increase in recent years has taken the proportions of a major educational crisis. Nationally, the percentage of college youth attending institutions of higher learning has been increasing at a rate of almost one percent per year for the last ten years. It is reported that between the years of 1963 and 1965 the number of high school
graduates and consequent enrollees in our colleges will increase by better than 40 per cent. University enrollments are expected to double within the next ten years.\(^{14}\)

A basic explanation for the increase in enrollments is to be found in a birth rate that has approximately doubled in the last twenty years.\(^{15}\) While the increased birth rate explains a large portion of the growth in college enrollments, it is not the only causative factor. Numbered among the other contributing reasons are (1) a growing awareness by the American people of the vital importance of their future well-being and national security; (2) a greater capacity to go to college resulting from an increased national income and standard of living; and (3) a gradual shift in the center of educational influence from private to public institutions.\(^{16, 17}\)

Problems related to enrollment increases

As a result of enrollment pressures, many physical education departments across our nation today are operating at what they consider their maximum capacities. They are

\(^{14}\)Fawcett, loc. cit.


\(^{17}\)Fawcett, loc. cit.
beset with related problems arising from (1) alarming increases in class sizes; (2) growing shortages of space and facilities; (3) increasing conflicts in scheduling; and (4) resulting difficulties in maintaining or improving effectiveness.

Larger classes are a fact of life that all colleges and physical education departments must accept for the future. The issue must be faced. Students are now required to learn more than ever before, and the learning must take place in a setting dictated by larger classes, less space, and restricted schedules.

There is no denying the need for research in testing methods. New teaching tools must be devised and more effective use of present teaching techniques afforded. Answers must be found relative to how modern developments in teaching aids, including programmed instructions, television, and team teaching can be used most effectively to reach the objectives sought for in physical education.18, 19, 20


A second challenge arising from increases in the college population comes from the improved financial capacity of students to attend college. The average college campus now has a student body with a wider representation of various social, economic, racial, and religious backgrounds. The range of student individual needs are more diverse now than ever before. Conventional subject-centered curricula in physical education are no longer adequate. New emphasis are called for in the evaluation of students. On the basis of improved evaluation a new and personalized course content must be devised if the needs of students are to be served and the effectiveness of learning enhanced.

Summary

Ours is a dynamic society fraught with pressures that result from change. The pressures that produce the current issues in physical education have been identified with explosive increases in both scientific knowledge and college enrollments. The educational implications appear to indicate a need for a new emphasis in physical education curricula, methodology, and intensity of programs in order to assure a fulfillment of the potentials of complete individual development.

Statement of the Problem

The purpose of this study shall be to prepare a basic foundation of knowledge, skills, and attitudes which
might be held in common by all men who complete their physical education requirement in higher education.

The format of the problem will be concerned with two sub problems:

1. The development of program content which is based upon the needs of students in the changing culture of the day. The content of common learnings will be designed to give form and substance to what constitute a "physically" educated man.

2. The development of a plan for implementation of a program content based upon examination of modern methods, procedures, and materials which might best improve the effectiveness of teaching and provide solutions to problems posed by increasing enrollments.

Basis assumptions

It is believed:

1. That general education should be provided for all undergraduate students.

2. That the core program is a significant trend in the reorganization of college physical education curricula.

3. That educational and psychological research has proven the concept of the unity of man (the physical, mental, emotional, and social aspects of human growth and development are inseparable).
4. That physical education has a significant contribution to make to the general education program through the medium of movement.

**Hypothesis**

It is the belief of the writer:

1. That a core of knowledge, skills, and appreciations can be identified in the general education program of physical education for college men.

2. That the use of new and different teaching methods, procedures, and materials can be induced into the implementation of a core program to make learning more effective.

**Limitations**

The study will be limited to the formulation of a basic core content, methods, and implementation in physical education without experimental validation of the proposals. The purpose of the study is not to discover something of which until now we have been ignorant, but to know something better which in a sense we know already; not to know better in the sense that we know more about it, but to know it better in a different and better way.\(^2\) While the study is not designed to consider the values that might accrue to physical education at any stated college or university, it

is expected, however, that the findings will be adaptable to many of the present physical education programs across the nation.

Method of procedure

The development of this study will proceed according to the following plan:

1. A careful review of the literature will be made to study the nature of existing core programs, to acquire knowledge of new or different methods of teaching, and to ascertain the status, needs, and interests of college students today.

2. In light of the overview of the literature, value judgments will be made for the purpose of selecting broad purposes and specific objectives to direct further study relating to specific program content, teaching methods, and implementation.

3. A second form of research will be made through the use of personal correspondence with selected colleges and universities known to have a core, or common learnings, approach to their program. When preliminary correspondence indicates a program of special interest, a follow-up visit to that college campus will be made to allow a more direct and intimate study of their program.

5. A synthesis will be made of the information acquired through research in the related literature, analysis
of correspondence returns, campus visitations, and personal ideas and biases.

5. After a careful study of the alternatives available for content, teaching method and implementation, a series of selections will be made proposing a curricular core of common learnings for the general education program of physical education.

6. The conclusion of the study will concern itself with a review of the problem, a discussion of the principal findings, suggestions for further study, and policy recommendations.
CHAPTER II

A DEVELOPMENT OF THE CONCEPTS OF PHYSICAL EDUCATION

Every successful person in a profession conducts his affairs within a foundation of principles. Objectives are set, decisions made, and outcomes are evaluated on the basis of principles. In a like manner principles also become the source of all sound educational programs.

Principles may be broadly defined as representative statements of generalizations that are based upon the best information that is currently available and will lead to effective action.¹ Scientific facts or philosophic judgment that arises out of insight and experience appears to be the source of these general concepts. In actual practice principles have become synonymous with what we more commonly refer to as basic beliefs.

The best information that is currently available can be altered by the advances of science. New insights and experiences give evidence that principles which must be evaluated periodically to test their worthiness for the situation in which they are used.

Purposes of Higher Education

The challenge which society gives higher education is historically clear and currently well defined. Broadly stated, educators are charged with the primary function of recapitulating and strengthening the cultural, moral, and political way of life through the education of youth.

The basic beliefs which have been accepted as ideals for which higher education strives today are outgrowths of studies done by the President's Commission of Higher Education\(^2\) and, recently, by the Educational Policies Commission.\(^3\)

Further elaboration upon the specific principles that guide higher education will also serve to identify the precepts that have been accepted by the writer as the foundation for this study. The guiding principles that follow seem to cover three broad areas of social need.

1. **Individual worth.** One premise of our democratic society is based upon a recognition of the "principle of individual worth." It is therefore recognized as a basic purpose of education. This fact is underlined by the Commission when it charges educators with the responsibility


"to foster the individual capacities which will enable each human being to become the best person he is capable of becoming."\(^4\) This principle also carries the implication that through a recognition and development of his own capacities (physical, social, emotional, and intellectual) a student will come to understand the variance in the capacities of his peers. Individual self-realization and self-development must be an abiding goal if our democratic society is to be preserved and advanced in the years to come.

2. Moral and ethical code. The needs of society are further served by higher education through the development of an acceptable moral and ethical code based upon the practice of democratic behavior.\(^5\) The values and ideals of our culture have long been recognized as the stabilizing influences that provide the foundation for future social progress. The preservation and improvement of our way of life is based upon the belief that the basis and beginning of knowledge must be a moral commitment. Teddy Roosevelt once said, "A tramp will steal from a railroad car. Send him to college and educate him and he'll steal the railroad." The ultimate value of education is not to be found in the quantity of knowledge produced as it is by the degree to which society is served through the use of what is learned.

\(^4\)Ibid.

3. **Rational powers.** The third general principle of education is at the very center of the purposes of higher education. This is the development of the rational powers of man. Webster defines the rational person as "one who has the power of reasoning and understanding." The reasoning student is one who understands the evolution and status of his cultural heritage. He is characterized by an active intellectual curiosity, and the capacity to think, inquire, interpret, relate, and create within the ever broadening context of his environment. In its concluding statement the Educational Policies Commission makes the following observation:

Man has already transformed his world by using his mind. As he expands the application of rational methods to problems old and new, and as people in growing numbers are enabled to contribute to such endeavors, man will increase his ability to understand, to act, and to alter his environment. Where these developments will lead can not be foretold.

Man has before him the possibility of a new level of greatness, a new realization of human dignity which will realize this possibility is the kind of education which frees the mind and enables it to contribute to a full and worthy life. To achieve this goal is the high hope of the nation and the central challenge of its schools.6

The dominant theme that appears to prevail throughout the three basic purposes of higher education is a dedication to serve the needs of society. Whether it be to produce informed citizens, to provide society with a

6Educational Policies Commission, *loc. cit.*
sufficient number of professional people, or simply to re-
capitulate our culture and its values, the obligation of
this service can not be denied. The dynamic nature of our
society and its culture requires that educators be both
vigilant and sensitive to the nature of developing social
needs.

Objectives of general education

Higher education includes both professional educa-
tion and general education. In their professional prepar-
ation students are called upon to focus their intellectual
concern toward a study in depth within the framework of the
professional curriculum that each individual has selected.

On the other hand the general education division of
higher education provides both a contrast and a balance for
the specialized education required by professional prepar-
ation. The curriculum strives to achieve a breadth of know-
ledge in many disciplines by expanding the horizons of
intellectual interests and truly "liberating" the mind.

General education is designed, basically, to prepare students
for the common life of their time and their kind: it is
therefore a unifying element of their culture.

The three principles that guide higher education
(individual worth, ethical values, and rational powers) pro-
vide the foundation for a more detailed listing of the objec-
tives that comprise the general education outcomes which are
sought for all college students. These objectives are as follows:

1. To develop behavioral outcomes based upon ethical principles consistent with democratic ideals.
2. To motivate active participation as an informed and responsible citizen.
3. To develop and maintain a condition of personal good health and fitness.
4. To understand the common phenomena in his physical environment, to apply habits of scientific thought to both personal and civic problems, and to appreciate the implications of scientific discoveries for human welfare.
5. To understand the ideas of others and to express his own effectively.
6. To attain satisfactory emotional and social adjustment.
7. To understand and enjoy literature, art, music, and other cultural activities as expressions of personal and social experience, and to participate to some extent in some form of creative activity.
8. To develop sufficient knowledge, understandings, and skills which will enable him to use his leisure in ways that are constructive and satisfying.
9. To acquire the knowledge and attitudes basic to a satisfying family life.
10. To develop an understanding of his cultural heritage and to gain perspective of his time and place in the world. 7, 8

The Nature of Physical Education

The true function of physical education depends upon several associated factors. Among the most significant of these are: the purposes of education in American democracy and the role of physical education in contributing to that purpose, the characteristics and status of college youth, and the unique contributions of physical education apart from other subjects or programs in the curriculum.

Physical education in higher education

In 1929 John Dewey 9 recorded his definition of education with the following statement: "Education is that reconstruction of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience." If we accept the viewpoint that the diverse needs of a society can be achieved through the use of educational experiences, and if these needs are accurately defined through the objectives of general

7 Ibid., p. 15.
education, it follows that the scope of curricular concern will be necessarily broad. No single department or subject can provide the depth and breadth required for a total education. The full scope of education is achieved through an administrative framework of subordinate departments and subjects. The primary function of all departments, then, is to plan educational experiences designed to fulfill these objectives through the medium of expression basic to a given department or subject. Thus, it may be expected that some of these experiences will originate in the laboratory, others in the classroom; most will be planned for within the scheduled curriculum, while a few will be extra-curricular; some experiences are designed to impart knowledge or emphasize its use and interpretation, but others deal with the life of the student. In physical education the medium of expression is movement.

**Physical education defined**

The purpose of a definition is to explain the meaning or properties of a word or phrase that show its distinguishing features and point out its relationship to other things of an associated nature.  

How then shall we define physical education? The meaning of this term is subject to two basic differences in

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10Brownell and Hagman, loc. cit., p. 17.
interpretation. These differences are to be found in the objectives and outcomes sought as a result of movement experiences.

The first viewpoint of physical education is based upon a literal interpretation of the term—an education of the physical aspects of man. Those who support this view see the meaning and purpose of physical education to be limited to a development of organic vigor and neuromuscular skills. They fail to recognize any educational responsibility beyond these restricted outcomes. This concept and meaning finds its roots deep in the historic origin of physical education in this country.

The theory that man is divisible is no longer considered educationally sound. The mind and body are not separate entities to be educated as they develop independently of each other. On the contrary, their inter-relationships are so close and complex that modern educational practice is based upon the biological unity of mind and body. Delineation of this unity into separate classifications of human traits—physical, social, moral, and emotional—merely attempts to facilitate the process of education. The degree to which physical education develops all of these traits is a measure of its worth.

In his classic article titled, "Education Through the Physical," Williams forecasts the need in physical
education for a broader meaning: "We need to aim higher than health, than victorious teams, than strong muscles, than profuse perspiration."\(^{11}\) He would have us recognize the unity of man by assuming educational responsibility, through developmental movement experiences, for not only the physical traits of man but also his social, moral, emotional, and mental welfare. This second interpretation of physical education recognizes movement as a medium for serving the full scope of those purposes that direct higher education.

Following this line of reasoning the writer recognizes the responsibility of physical education in relation to (1) optimum development of the individual, (2) a dedication to the development of wholesome moral and ethical values, and (3) development of the rational powers of man.\(^ {12}\) The writer finds added support for his view in the statement of the National Conference, summarizing current professional opinion, which defines physical education to be "... concerned with movement both as physical activity and as a means of communication and expression and is employed in accepted ways of human welfare."\(^ {13}\)


\(^{12}\)Educational Policies Commission, *loc. cit.*

\(^{13}\)Abernathy and Miller, *loc. cit.*
Relation to general education

The status of physical education as a contributor to the "common learning" pattern of general education is well established in American higher education today. A recent nation wide survey reveals that 83 per cent of all colleges and universities require some form of physical education before graduation. Sixty per cent of the institutions reported that the term of their physical education requirement included four semesters, or their equivalent, of instruction.14

Earlier acknowledgment has been made to the fact that many media are required to achieve the total education desired for optimum personal and social development. No one department or subject can achieve all the objectives general education—though each strives to this end. The limitations of their media produces varying degrees of success in achieving these goals. Every department or subject therefore has a unique contribution to make to the total list of general education objectives.

Physical education can be readily seen to utilize the medium of movement in making the following unique contributions to the general education pattern: (1) the development and maintenance of good health and fitness, (2) the

14 Harold Cordts and John H. Shaw, "Status of Physical Education in Required or Instructional Programs in Four Year Colleges and Universities," Research Quarterly, XXXI (October, 1960), p. 409.
acquisition of sufficient skills and knowledge to make worthy use of leisure time, (3) a development of behavioral outcomes based upon moral and ethical principles, and (4) satisfactory emotional and social adjustment.

Oberteuffer\(^{15}\) visualizes activity participation as being a central force (such as produced by a pebble thrown into a pond) which creates concentric waves of influence which encompass many of the broad objectives of general education. This concept is illustrated as follows:

<table>
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<th>Understanding self</th>
<th>A deeper understanding of human nature and human relationships</th>
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<tr>
<td>&quot;Health&quot; values</td>
<td>Favorable psychological characteristics</td>
<td>An understanding of the democratic way</td>
</tr>
<tr>
<td>Activity participation</td>
<td>Fun and amusement</td>
<td>Social controls</td>
</tr>
<tr>
<td>(organic fitness)</td>
<td>Practice in reflective thinking</td>
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**General objectives of physical education**

A recognition of the relatedness of all curricular factors considered thus far prompts the following listing of general objectives which serve to further identify the nature of physical education. In the general education pattern, and

with full recognition of the unity of man, physical education is designed to provide for—

1. An opportunity to develop optimum health which is consistent with heredity and present health knowledge.

2. The attainment of a kind and quality of activity skills that will provide the student with a means of self-expression and a life long use for recreational purposes.

3. The opportunity to acquire knowledges, attitudes, and understandings which will be sufficient to motivate continued activity beyond the college years.

4. The development of a social competence and emotional poise sufficient to meet the stresses and strains of modern life.

5. The inspiration of spiritual and moral qualities which contribute to the advance of our democratic society.

6. An appreciation of the contribution that recreational sports have made in our cultural heritage.

The Status of Students

The term "society" as used thus far has a broad and rather vague definition. Webster refers to society simply as "human beings collectively." This definition could be used to encompass a recognized educational responsibility to the world population, or to sub-groups limited by common national, cultural, religious, or even neighborhood concerns. Certainly no one can deny the desirability of an
education designed to improve knowledge and understanding within the sphere of all these groupings of society. None of these societies, however, can occupy a seat in the college classroom. Individual students do. The status and needs of our various societies can be served only through the recognition of these needs as they are experienced by the individual and, collectively, by all youth. The immediate and future needs of students are therefore considered as being central to the purposes of education. The student, through his education, becomes the investment that society makes in its future.

What is the modern college student like? What do we know about his social background, the personality traits and interests that characterize him, and his immediate and future needs? These are questions of extreme importance to this study.

Social background

The educational purposes of serving the needs of society would indeed be simple if we lived in a stabilized culture, untroubled by change. Ours, however, is a dynamic culture which is forced to continually adapt to changes in our way of life resulting from advances in scientific technology. Today's college students are the product of the society which has molded their development thus far. A
partial listing of the social forces which have been brought
to play on students reads as follows:

1. The population is becoming more mobile. Tra-
ditional stabilizing influences such as the ties with family,
community, and a set way of life are being broken with in-
creasing frequency as men seek broader employment opportuni-
ties over greater distances. According to the most recent
report of the U.S. Census Bureau, approximately one-fifth of
our entire population has moved to a different address in
the preceding twelve months. The major population moves
are being made to urban centers or on their fringes where
approximately 70 per cent of the population of our country
now resides.

2. Labor saving devices and increased mechanization
of the way of living has all but eliminated the opportuni-
ties that once existed for the use of available muscle power
by our labor force.

3. The 40 hour week with paid vacations is now a
standard procedure with still shorter hours and longer
vacations in the offering.

16Dorothy C. Disney, "The Trials of Families on the

17U.S. Bureau of Census, Statistical Abstracts of
4. The influence of the family is decreasing while schools and other social agencies are assuming more responsibility for the supervision of youth activities.

5. Approximately one marriage in four now ends in divorce. In 40 per cent of these divorces there are children involved.18

6. Mental and emotional disorders have become the number one public health problem. Over one-half of all patients in hospitals are mental patients. It is estimated that 30-50 per cent of all patients consulting doctors have complaints that are due, at least in part, to emotional disorders. Predictions are made that one out of every twelve children born each year will suffer a severe mental illness.19

7. There appears to be a general compromise in ethical and moral values as reflected by an increase in the crime rate which is five times greater than the proportional population increase in the last five years.20

18Ibid., p. 71


Characteristics of students

Any person attempting to typify college students must necessarily do so first by considering the range in their variance lest the impression be left that all students are equally represented by a study of the average individual. There is no more fitting way to illustrate this variance than through a study of the educational background and capacity each freshman brings to the college campus.

A recent study involving the use of the American Council on Education Psychological Examination (ACE), on over 60,000 students, pointed up the extent of variance that may be found within single student bodies. In some instances the diversity was so great that many faculty members are attempting to handle classes where there is an I.Q. variation of more than 50 points.\(^2\)

While the chief characteristic of college students is diversity (not only in I.Q. but also in cultural, economic, religious, and racial backgrounds) the literature does provide enough information to gain some insight into the characteristic traits, needs, and interests of this age group.

A statistical composite of college students shows the typical male freshman to be 18.5 years old when he enrolls. Approximately 40 per cent of his college expenses

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are contributed by his family while summer work, savings, and a campus job provide the balance.22 Well over one-half of college bound high schoolers plan to work their way through college while later surveys show that two out of three students will work at least part time. Not all the money earned will be spent on education, however, for better than half (55 per cent) of college men report they have their own car.23

Students appear to have different reasons for seeking a higher education and choosing a particular college. These motivations may have their roots in the background, social situation, personality, and developmental situation of the individual student. The principal motivation appears to be a desire for vocational training and the improved social mobility that it may bring. The most frequent choices, as evidenced by the number of college majors at graduation, are: business, social science, engineering, liberal arts, and education. In the early years, before a specific vocational course has been set, college men are seen to be actively planning and testing for future work identities, apparently shifting alternatives in an effort

22Harris, loc. cit., p. 294.

to find the role that will fit most comfortably their particular skills, interests, and needs.

The traits that characterize the physiological status of college students show them to have nearly attained their optimum growth. They exhibit a wide range of body types, skill levels, and weight control problems. At this age college students are found to possess their greatest potential for the development of strength, coordination, and endurance.24 An unfortunate sign of the times, however, indicates a constant decline in the realization of this potential. An example of this decline is illustrated by the results of the annual physical fitness tests for freshmen at Yale University: 51 per cent of the class of 1951 passed these tests, 43 per cent of the class of 1956 passed, and only 38 per cent, a little more than a third, of the class of 1960 succeeded in passing the not overly rigorous examination.25 A second study concerned with the student's own attitude about his physical fitness revealed that almost half felt that they were physically soft when compared to their parents' generation.26

24 National Conference Report, loc. cit., p. 5.


26 Gallup and Hill, loc. cit.
The emotional stresses produced by our dynamic culture, when added to the pressures of accelerated college curricula are taking a great toll among students today. More than one student in ten has an emotional disturbance that requires help.\textsuperscript{27} Many others have emotional difficulties disturbing enough to interfere with their college success.\textsuperscript{28} A further negative indication of the emotional health of college age youth is to be found in current mortality statistics. Accidents, homicide, and suicide are listed among the four leading causes of death.\textsuperscript{29} All three of these causes may well have been motivated by the inability to handle the tensions associated with daily campus life. It has been estimated that a full 25 per cent of all freshmen who drop out of college before the end of the first year do so not because of any lack of intellectual ability, but rather because of unsolved problems.\textsuperscript{30}

\textsuperscript{27}Donna Farnsworth, "We're Wasting Brainpower," \textit{National Education Journal}, XLVIII (March, 1959), p. 42.


College youth have a great interest in leisure-time activities. While the activity interest reaches an all-time high during this period there is a noticeable shift in the direction of their interests. The emphasis upon team sports that occupied their concern in high school is seen to shift to a favored participation in recreational activities typified by the many individual and dual-type sports.31

Students are also especially desirous of continuing their heterosexual adjustment, and to establish desirable relationships with the opposite sex. Studies indicate that they prefer dating activities that involve doing something out-of-doors, meeting in an informal setting, relaxing, and just generally getting to know one another.32

Emotionally, these young people have just cut the cord that binds them to their parents. They haven't yet had to develop a value system based upon their own experience. Freshmen are therefore distinguished by their instability in respect to self-esteem.33 Each student seeks an answer to the question of his own identity. He does not know what he can do, how good he is, or just what to think of himself.


33Sanford, loc. cit., p. 196.
In the absence of immediate goals or self-confidence the freshman will lean heavily upon group acceptance. This is a very formative stage in his life. He desires to emulate someone whom he can admire and respect and in this manner is seen to depend upon external sources for the definition and measurement of himself. The extent and consequences of this dependence is described by Sanford:

The vulnerability to other people's appraisals make the average freshman highly susceptible to the influence of his fellow students; their approval or disapproval can make or break his self-confidence . . . the young man's doubts and fears, and hopes, about his masculinity are a familiar phenomena. As a college freshman he has reached the place where the crucial test can not be postponed much longer . . . Over the long pull he must . . . build up an internal basis for self-evaluation and learn to take satisfaction from accomplishments that are genuinely worthwhile.34

Data appear to strongly support Jacob's35 conclusions that a national "norm" of social attitudes and values prevails for all students across the nation. The social development of college youth presents a strong challenge for college educators.

Studies show the typical college youth to be an unabashedly self-centered, security minded, conformist. He has little spirit of adventure and would rather settle for low success than risk high failure. He is a reluctant

34Ibid., pp. 263-264.

patriot who expects nuclear war in his time and would rather compromise than risk all-out war. He has an instrumental approach to reason and morality which pulls both reason and the moral code into the service of present personal goals rather than acknowledge them as guides to verify and control rules of conduct. He wants very little because he has so much and is unwilling to risk that which he has. 36, 37, 38, 39

Student needs

Appraisal of the characteristics and status of students is a prerequisite to determination of their individual and group needs. Identification of the needs of students as a group must be prefaced with a recognition that the range of individual needs is wide. Because of this the greatest single need for all students is for each to be assisted in recognizing and fulfilling his own unique needs. There is no average college student. While the individual characteristics and status of students show a great variance there are general similarities that may be of particular interest to curriculum planners.

36 Ibid., p. 4.
39 Gallup and Hill, loc. cit., p. 64.
What are the common needs of students that can be best served by physical education? In the light of the social heritage of college students, and the resulting physical, social, intellectual, and emotional characteristics, the following list of student needs appears to have special significance to the unique role of physical education in higher education. College students appear to need—

1. Opportunities for self-evaluation in terms of personal potentialities and limitations;
2. Opportunities to set their own goals, based upon an increasing recognition of their needs and the desire to fulfill these needs;
3. A systematic program of activities with sufficient vigor to place the body under stress and thereby improve physical fitness;
4. The development of satisfying recreational skills as a source for: self expression, pleasure and satisfaction, and social approval, and;
5. Activity experiences on a co-educational basis.
6. The development of knowledge, skills and understandings regarding the contributions of physical activity to physical and emotional health;
7. The fostering of a system of moral and ethical values, based upon pride in democratic principles, that will seek to serve society as opposed to the pursuit of selfish interests.
Core and Physical Education

There appears to be a widespread agreement among educators that general education refers to that part of the nonvocational and nonspecialized curriculum which is designed to meet the common needs of students. Since its inception, however, there has been considerable divergence of judgment as to what the nature and pattern of general education should be.

Comparatively recent curricular experimentation has produced several emerging patterns, each of which makes a unique approach to the problem of integrating learning and thereby vitalizing general education. A currently popular and effective pattern of curricular organization has come to be known as a core.

Definition of core

Like many terms used in education, "core" has no precise definition. One reason for this fact lies in the differences of interpretation and areas of emphasis associated with the use of core. The Educational Policies Commission 40 first popularized the core through a curricular concept based on "common learnings." In the same year

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Butterwick identified three separate meanings for core. Albery, writing just one year later, contributes to the confusion over definition by describing six types of core which were unique to his viewpoint.

Basically, however, most educators agree that core refers to a program or a course, within the general education pattern, which is designed to provide all students with a common body of experience organized around problems of both a personal and social nature.

Within the context of this study, the writer visualizes the function of core to exceed the implication that its content will be limited to a concern for just minimum requirements. Rather, the central purpose of core shall be viewed as a means of providing a center around which other curricular experiences in physical education revolve; it shall be a basis for subject matter to be selected, skills developed, and understandings acquired.

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Characteristics of core

The writer has synthesized and selected the following traits which he believes are most characteristic of core: 43, 44, 45

1. The core curriculum concerns itself with two basic areas of organization. First, in the general education pattern, it seeks to identify and develop the common competencies needed by all students. The second area of organization is centered around the development of special knowledge and skill based upon the recognition of individual differences in interests, attitudes, and capacities.

2. The core calls for the exploration of a wide range of relationships. It attempts to integrate learning in such a way that there is an understanding of the manner in which independent parts of a larger whole relate to each other. In this manner seemingly unrelated knowledge and experience are brought together into a way that seeks to make learning meaningful for students.

3. The core idea is based upon the principle that learning involves a change in behavior that is brought about 

43Butterwick, loc. cit., p. 215.


through experience. Both curriculum content and teaching method are selected on the basis of their likelihood of producing desirable behavioral changes. Meaningful experiences rather than a definite body of subject matter are viewed as the most likely way to influence behavior.

4. The core utilizes an individualized approach to teaching content and technique. Evaluative measures of student self-appraisal, and teacher-student planning are techniques used to identify and solve common problems of a personal and social concern.

5. The core requires a larger block of time to make possible the maximum exploration of content inter-relationship. Flexibility and adaptability of time make possible a more meaningful content, continuity, and student interest. The teaching of whole concepts is enhanced through the block time organization.

6. The core makes individual and group guidance an integral part of teaching. Students are encouraged to develop a realistic self-image and to redirect their energies in a manner conducive to the realization of optimum potentials.

The core in physical education

The division of core concerned with general common learnings can be traced back in the field of physical education to the year 1859. It was at this time that the first
known college physical education program was organized at Amherst College. Dr. Hitchcock was appointed the director of physical education and was instructed by a Gymnastic Committee of the Amherst Board of Trustees to require all students to attend a one-half hour program of exercises for at least four days per week. Since physical education was required of all students, and the program content was administered to the group as a whole, this might be interpreted as the beginning of what would later be known as a common learning approach to physical education.

The second division of core which is concerned with the special needs and interests of students first appeared on the educational scene some thirty years later. Dr. Dudley Sargent, a medical doctor and physical educator, is credited as being the first to use a combination of medical and physical examination as a basis for individualizing physical education for his students at Harvard. In this manner organic and functional deficiencies were diagnosed for each student and a prescription of special exercises was tailored for the individual need.


Thereafter, the literature records no great change in the otherwise formal and rigidly structured approach to teaching method and content until the first several decades of the twentieth century. At that time, led by Dr. Thomas Wood and Clark Heatherington, the principles of the currently popular educational developmentalism philosophy were applied to physical education. The name that they gave to the changed curricular emphases was the "New Physical Education." These men, with the others such as Jessie Williams, Jay Nash, and Luther Gulick, were responsible for a shift in curricular emphasis away from subject to allow a focus on the student.

It was at this time that a real impetus was given to a physical education curriculum based upon student needs, problems, and interests. The impetus provided has prevailed and is evidenced in many programs today. The literature records a parallel concern with appropriate teaching techniques from the mid-1930's to the present day. Frequent use has been made of: orientation courses; guidance in physical

education; student self-appraisal and self-direction; and other methods of individualizing programs.49, 50, 51

As the new physical education movement gained momentum, the encroachment of the informal types of activity on the formal gymnastic class became more noticeable. The shift in program emphasis favoring the recreational aspects of physical education appears to have developed from a greater recognition of the need for activities with a carry-over value for adult life.52 The tendency toward less formal forms of activity, combined with interest in activities with a carry-over value, was responsible for an era of games and sports being launched as the center of curricular emphasis. This era was at its peak in the several decades between 1930 and 1950.

With the swing of the curricular pendulum toward a student-centered curricular pattern, there was a corresponding shift of interest away from specific common learning


52Van Dalen et al., loc. cit., p. 425.
experiences. The latter was too closely associated with traditional subject-centered, rigidly structural curricula which had a tendency to force students into a pre-conceived mold within the physical education program. Common learnings were, therefore, replaced with a pattern whereby students were encouraged and guided into a selection of activities based solely upon their recognition of personal needs and interests.

The free elective pattern for physical education was still the center of focus in American colleges as late as 1951. At that time LaPorte summarized twenty-three years of curriculum research by recommending "that students be permitted to elect any course that they might wish except in cases of those limited because of physical handicaps."

A common learning requirement was not destined, however, to be permanently excluded from the physical education curriculum. In 1939 Cieurzo recognized the need to enrich the curriculum by giving form and continuity to the otherwise completely permissive programs of the day. His suggestion that there should be minimum requirements or


prerequisites for some courses heralded the altered form that common learnings would take in their return to the physical education curriculum. A trend developed in this direction until by 1953 the results of a nationwide survey revealed that 62 per cent of college physical education students were required to take certain prerequisites before they could enroll in elective classes. The continuing popularity of this trend was noted in a similar survey done by Cordts and Shaw seven years later. The prerequisites and minimum requirements are to this day considered by many physical educators as the core of their departmental program.

A study of contemporary core patterns in physical education reveals that each falls into one of four general categories on the basis of the degree to which they allow for student election within their content. These currently developing patterns of core are identified to be (1) a specified activity requirement; (2) an area requirement; (3) a basic course requirement; and (4) a combination of the basic course and area requirements.

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56 Cordts and Shaw, loc. cit.


58 Cordts and Shaw, loc. cit.
A specified activity requirement

Students participating in this core pattern are all required to take one or more activities without benefit of choice. The activities are prescribed for the group as a whole. The range of the requirement may run from just one activity to the possible prescription of the entire activity program. This type of core, with a heavy emphasis on common learnings, is most frequently found in smaller colleges where a limited staff and facilities dictate the curricular organization as an administrative expediency. The specific activity requirement is also found where institutions are sufficiently convinced of its use as a medium for leisure, or as a developmental tool.

The area requirement

The administrative structure of this core is based upon a desire to acquaint students with a broad representation of the different types of physical activity. A National Conference Report on Physical Education for College Men and Women\(^5\) \(^9\) lists seven of the most commonly used areas as follows: (1) aquatics, (2) body mechanics, (3) individual and dual sports, (4) outing activities, (5) rhythmic activities,

(6) sports appreciation, and (7) team games. Departments utilizing the area requirement core of experiences usually require student election of specific courses of their choice within two or more of the seven areas. A typical example of this type of core may be found in the basic instruction program at the State University of Iowa.60

**A basic course requirement**

Current literature indicates an increasing interest in the requirement of an introductory course. These courses are often referred to as: orientation, fundamentals, developmental, or foundation courses depending upon their content and emphasis. The single course pattern for core appears to be receiving increasing recognition based upon its promise as a medium for intellectualizing the approach, expanding and intensifying the program, and for directing more attention to the discovery and satisfaction of individual student needs.61 The basic course requirement is frequently used as an introduction to later unrestricted student election of activity skill courses. The literature


records core programs of this nature at Michigan State University62 and at Wayne State University.63

A combined area requirement and basic course core

Much curricular experimentation is currently being engaged into combining a knowledge of the basic activity skills (area requirement) with the intellectual and self-appraisal opportunities inherent in the basic course core. The wedding of these two core types appears to provide the broadest possible base for common learnings while also providing for a measure of student election of courses. The comparative newness of this type of core pattern is evidenced by a lack of reference in the literature. The writer is, however, aware of experimental programs of this nature currently being conducted at: Temple University, The University of Maryland, The Pennsylvania State University, and California State College at Hayward.


63McBride, loc. cit.
CHAPTER III

THE CORE PROGRAM

For purposes of identification and discussion the needs of students in physical education can be classified into four areas: (1) neuromuscular skills; (2) physical development; (3) social competence and emotional control; and (4) knowledge, understandings, and attitudes. Classification in this manner does not mean that the components are isolated and unrelated. Earlier recognition of the unity of man implies that many of these needs will be met and developed concurrently through selected movement centered experiences.

What is the nature of program content in physical education that attempts the difficult task of satisfying the common needs of students, while also providing for a wide range of individual differences? What evidence do these needs give for the determination of knowledges, skills, and attitudes that best enable today's students to meet the challenges and pressures associated with daily living? What teaching methods and techniques in physical education will be necessary to provide for an enriched curriculum in the face of exploding enrollments? The answers to these questions...
are complex and broad. There are many alternatives to choose from. In the text to follow, the writer will attempt to identify the issues, consider alternative solutions, and suggest answers to these questions.

Guiding Principles

The characteristics of core, when combined with the needs of college students and applied to the field of physical education, appear to afford a unique approach to the determination of those common learnings which are both needed and desired to "physically" educate the college man. Identification must first be made, however, of the basic beliefs that will serve to guide a more specific selection of both content and teaching method.

The decision to combine a listing of the principles of content with those required for a determination of teaching method has been made in the belief that consideration separately is neither feasible or desirable in the light of the very nature of core. If the purpose of core is accepted to be concerned with motivating students to change behavior patterns, then it would appear that the effectiveness of core is based upon the degree to which program content and teaching method can be united. Larson\(^1\) makes the observation that "educationally, it is a combination of what and

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how that determines the end results of the individual's experiences in physical education." A consideration of the combined principles of content and method are a unique characteristic of core, as opposed to traditional content-centered courses where methods of teaching are considered only after content is determined.

The core program of common learnings in physical education should be planned to

1. provide opportunities for a self-appraisal of status which are related to movement;

2. make an individualized approach to the needs of students;

3. develop an improved level of organic fitness achieved through participation in vigorous activities;

4. utilize the constant advances of scientific knowledge, in all areas of human behavior, to heighten appreciation of physical education;

5. assist students in their increasing development of self-directed learning;

6. integrate intercollegiate athletics, intramural sports, recreation, health, and other college departments with the physical education experience;

7. provide individual and group guidance according to a definite plan;

8. acquaint entering freshmen with the nature, values, and procedures of the program offerings;
9. provide for skills and knowledge associated with safety, protection, and survival;

10. encourage present and future participation in a wide range of activities with carry-over recreational and a vocational potential;

11. provide for the use of devices that will increase student perception;

12. offer a sensible activity program consistent with the needs of adult life;

13. provide opportunities for coeducational activities;

14. enable the student to find a means of adjusting to the emotional strains and tension associated with daily living;

15. satisfy the immediate needs of students;

16. provide for content which is based upon expert educational opinion as well as student interests; and,

17. make learning an active process where each fact presented is demonstrated and experienced by the student.

Proposed Program Content

The content and teaching methods of a physical education core can be combined in a number of ways for further study. A thoughtful study of the guiding principles stated above, and a recognition of personal biases, has resulted in a particular grouping of proposed content and method
which provides for: general orientation, self-appraisal conditioning, activity skills, knowledge, and guidance. Selection has been further influenced by a concern for developing some degree of continuity thereby providing for a logical progression of learning experiences. If the planning is successful the ultimate implementation to follow will be inherent in the decisions made regarding the selection of specific content and teaching methods.

General orientation of students

Entering college freshmen are frequently a confused lot. In addition to their internal uncertainty regarding personal status and potential, they are suddenly thrust into a new way of life in the campus community. There are a bewildering number of courses, regulations, and requirements that are designed to structure and motivate present and future educational experiences. Physical education, with its program opportunities and requirements, has the potential for contributing to the general bewilderment unless there are specific provisions designed to clarify and interpret the program.

Orientation objective. The objective of general orientation shall be to acquaint all students with information regarding the opportunities in physical education, the policies, procedures, facilities, program, and staff.
Orientation content. The scope of introductory material required to inform and motivate students may vary greatly on the basis of the degree of departmental concern, the means of communicating information, and the time allowed or available for this purpose. The minimum content would seem to be dictated by the scope of the program itself. If the principle is accepted that effective learning calls for an integration of knowledge, and if the contributions of inter-collegiate athletics, intramural sports, recreation, and health are related to physical education, then any consideration of introductory content should include these areas. A further elaboration of the knowledge desired as a general orientation to the total program is outlined below.

I. The general education program of physical education
   A. The general objectives of physical education
   B. Specific qualities that characterize the "physically" educated college man
   C. Location and use of facilities
      1. Campus facilities available to students
      2. Rules of conduct pertaining to facilities
      3. Community facilities available for recreational use
   D. The program
      1. Nature of the core requirement
      2. Content of the elective program
      3. Introduction to the staff (name, degrees, specialty, office)
   E. Class organization
      1. Time allotments: dressing, activity showers
      2. Attendance procedures
      3. Policy regarding absences
      4. Grading criteria and methods
   F. Nature and care of equipment
      1. Equipment furnished by the college or by the student
      2. The need for care of equipment
3. Physical education uniforms
   a. How they are issued
   b. How and when cleaned and exchanged
   c. Procedure if equipment is lost
4. Locks and lockers
G. Safety and sanitation
   1. The need for safety procedures in the activity program
   2. What to do in the event of injury
   3. Regulations covering: (a) showers; (b) swimming pool; (c) prevention and care of athletes feet; (d) other common skin diseases; and (e) exchange of uniforms
H. The health examination
   1. Purpose of the health exam
      a. The nature of the various classifications
      b. The procedure required of students who are re-entering physical education classes after illness or injury or a prolonged leave of absence.
   2. Health services available to the student

II. The intramural sports program
   A. The relationship between intramurals and the basic instruction program
   B. Location of the intramural offices
   C. Nature of intramural organization and program
   D. How to get into intramural participation

III. The intercollegiate athletic program
   A. Relation of intercollegiate athletics to basic instruction
   B. Sports included in the program
   C. How to come out for a sport
   D. Identify the athletic conference and name the schools
   E. The set-up of athletics as controlled by the faculty
   F. Criteria for granting awards

IV. The health education program
   A. Relationship between health education and the basic instruction program
   B. The nature and scope of hygiene courses available to (or required of) freshmen
V. The professional preparation of physical education teachers

A. Relationship of the basic instruction program to the preparation of future physical education teachers

B. The professional opportunities available in health, physical education, and recreation

C. How, and where, to acquire more information, if desired.

The full exploration of content required to orient students to the broad purposes, policies, and opportunities in physical education appears to offer a very formidable task. No single means of communication will suffice to provide both the content and method required for maximum motivation of all students. In 1959 the variety of means by which orientation may be accomplished was proposed in a National Conference Report.\(^2\) Among those methods suggested were (1) freshman week programs, (2) use of handbooks and other printed materials, (3) audio-visual aids, and (4) group and individual conferences.

The use of freshmen week programs is not always a matter of choice of physical education departments. Under this plan freshmen are given a concentrated orientation to the total college program; its general education requirements, and other policies and procedures applicable to their academic and social life. The physical education department is among those generally afforded an opportunity to briefly

orient the freshmen to the program and policies. One advantage to this technique lies in the fact that all freshmen may be oriented at the same time. A second advantage may be realized by using selected specialists from the department (directors of the health, physical education, intramural, athletic, and teacher education departments). This first hand presentation in each area also permits the student to identify key members of the staff. The disadvantages of this method appear to be more numerous. The amount of time allocated is rarely sufficient to cover the scope of content desired. Empirical observation based upon participation in these programs lead the writer to conclude that many students are somewhat be-numbed by the deluge of information received over such a short period of time. It is highly questionable that little more than a vague picture of the program is retained following such briefings. Important facts regarding policy and procedures are usually either deleted due to time restrictions, or soon forgotten.

A second orientation technique utilized the medium of the printed word. Student handbooks in physical education, notices posted in conspicuous places, maps and diagrams of facilities, as well as periodic announcements in student publications provide another source of information regarding the program. The student handbook is especially desirous for it may contain a comprehensive
description of the opportunities available. Handbooks offer a permanent and standard source for future student reference to policy or procedure. There are, however, several deterrents to the use of student handbooks. The high cost of printing, and a tendency for students to put them aside unread, have prompted several departments to discontinue their use.

A third medium for providing a means of orienting students is to be found in the use of the moving picture. Oregon State University and Michigan State University both report a high degree of satisfaction with the results of using sound moving pictures, in color, to introduce their respective programs to students. Movies make it possible to actually visualize the appearance and location of facilities, to observe the action required of certain policies and procedures, and to see many of the pleasures inherent in the program graphically portrayed. A well-planned movie has the added advantage of serving as a public relations medium for interpreting the program to the general college faculty and community at large. The $1,500 cost of a 22 minute film, when produced by the university audio-visual department, appears to be reasonable when compared to the use that might be derived over a period of years.3

3Interview with William McKalip, Director of the Required Service Program, Department of Physical Education, Oregon State University, Corvalis, Oregon, Nov. 25, 1963.
Group and individual conferences require a two-way communication between instructor and students. Unlike the lectures required of freshman week programs, or the one way flow of knowledge inherent in printed literature or movies, the conference invites the student to participate in his own knowledge. He is encouraged to respond to what he learns by directing questions, seeking clarification, or challenging those portions of the content which are not clear to him. This orientation technique is highly desirable for its object is student understanding and not merely indoctrination. Group and individual conferences, however, require a great deal of time. If the time used for this purpose restricts student activity more than it motivates participation in a broader area, then the objective of orientation is not achieved.

How may the content of general orientation to the program be most effectively presented? The answer may be found in the combination of technique described. A movie to provide the overview to the program, a student handbook to supply the particulars, and department specialists to answer specific questions would be equally desirable in either a freshman week program or the smaller class conference setting.
Student self-appraisal

A distinctive characteristic of core is the concern evidenced for a program content geared to the developmental needs of students. A determination of these needs is vital to the curricular planning required to design student centered programs. The scope and purpose of self-appraisal in physical education must be broad enough to encompass all those potentials and capacities related to movement. Self-appraisal implies an increasing ability on the part of the student to recognize the meaning of physical education; his own defects; his physical condition; his needs for activity and organic power; his need for sport, recreational, and utilitarian skills; his recreational interests; his attitudes and understandings; his purposes and his problems. The self-appraisal of students would therefore require a preliminary measurement of status in all those areas for which program objectives are sought.

Appraisal objective. The basic objective of self-appraisal will be to assist students in the development of a realistic self-image in order that each may recognize his developmental needs and potential in physical fitness, neuromuscular skills, social and emotional efficiency, and knowledge.

4Hughes, loc. cit., p. 107.
The effectiveness of a self-evaluation objective is based upon the outcomes that are achieved through its use. The testing of students is, therefore, not an end itself, but rather a means by which broader goals are achieved. Further inquiry into the potential functions of self-appraisal reveals several worthy supplementary objectives.

A. Detection and referral. It is quite possible that in the course of testing, physical or emotional deviations may be detected which require professional attention from specialized college or community health agencies. Situations of this nature may arise most frequently in those colleges where a comprehensive medical examination is not a condition for enrollment.

B. Classification. Determination of status makes possible several forms of classifications for grouping students homogenously. Groupings may be made according to the medical, physical fitness, motor skills, or knowledge status.

C. Motivation. The determination of status also involves making comparisons and relating them to personal needs in an effort to find out where one is headed. This is the first step in motivating changed behavior patterns.

D. Evaluation. Preliminary evaluation of status serves as a basis for measuring progress toward personal goals of the student. The physical education department may base its student marking system upon valid measures in terms of program objectives. Data provided from self-evaluation
statistics are also valuable for the purposes of research in physical education curriculum improvement.

E. Guidance. The present needs of individuals, as indicated by their self-appraisal, provides the information necessary to determine future direction.

Self-appraisal content

Current literature fails to reveal any indication of the extent to which preliminary self-appraisal tests are used in the areas of general knowledge, and social or emotional status. Materials received from personal correspondence with numerous colleges and universities utilizing a core likewise failed to indicate any trend in this direction. Recent survey reports indicate that 30 per cent of departments regularly administer some form of fitness test.\(^5\) This figure does not, however, indicate the extent to which these fitness tests were used for self evaluation purposes. A general self-appraisal of activity background and skill status is frequently limited to a swimming classification test. While 33 per cent of colleges administer swimming classifications there is no indication in the literature of any such testing in other sports areas.\(^6\) Determination of student status, in all areas of common need has long been a failing of college physical education

\(^5\) Oxendine, loc. cit., p. 38.

\(^6\) Ibid.
programs. This is a failing that can and must be corrected if physical education programs are to keep pace with the social and educational pressures of our time.

Many tests are available for the evaluation of student status in physical education. They provide a wide range of content and technique alternatives. Specific selection from among these alternatives must be carefully made. The nature of the choices will have obvious curriculum implications. The use of guiding principles is once again required to chart the course for significant decisions. The selection and administration of all measurement experiences in core should provide for—

1. A determination of personal status based upon the broad objectives of physical education;
2. specific tests which will provide the most adequate validity, objectivity, and norms;
3. the use of tests that require a minimum of equipment, and which can be taken individually or with the assistance of a partner;
4. orientation as to the nature, values, and techniques of the tests and, afterward, interpretation of the outcome;
5. a minimum required expenditure of class time; and,
6. opportunity to retest at a later date and thereby assess individual progress toward stated goals.
Physical fitness

What is physical fitness? Mathews defines it most concisely as: "the ability of an individual to perform a given task." Karpovich is more specific as he defines physical fitness as "a fitness to perform some specified task requiring muscular effort." In order to ascertain how leading authorities in physical education and medicine defined physical fitness, a number of statements made during the last ten years were analyzed. The analysis revealed that the term "fitness" was most generally interpreted in its broadest concept that of total fitness.

Delineation of the various aspects of total fitness has resulted in the emergence of four broad classifications: (1) physical fitness, (2) recreational fitness, (3) intellectual fitness, and (4) social fitness. A general danger is inherent in classifications of this nature. Attempts to describe fitness of the body as different from the mind or other aspects of the individual tend to deny their interrelatedness in the unity of man's development. While the danger is real, the writer does not believe that all attempts to define separate aspects of fitness will result


8 Peter V. Karpovich, Physiology of Muscular Activity (Philadelphia: W. B. Saunders Co., 1953), p. 244.
in a denial of man's unity. On the contrary, quite often a separation is required for a more complete understanding of the extent to which one affects the other. The real threat lies not in the act of separating the various aspects of fitness, rather, it is to be found in a too narrow interpretation of the outcomes. Future use of the term "physical fitness" in this text will infer the broadest possible interpretation of the capacity to perform a specialized task requiring muscular effort. In seeking the means to determine these capacities primary consideration will be given those measures which deal with the structure and function of organic development.

Medical examination. A very basic and vital measurement of structure is a determination of the students' general health status. It is desirable that this examination should be a prerequisite to enrollment in the physical education program. At one time many of these examinations were conducted on the campus by a college physician. Increasing enrollments and a change in medical philosophy now favors an examination by the family physician. Normally such examinations include a complete medical history, and tests of the heart, lungs, vision, hearing, teeth, and other standard tests. Upon receiving the results of the medical examination a student health service physician may evaluate the results and classify the student for future physical education participation. The most common classifications
include: A - unrestricted participation, B - limited participation in an adopted program, and C - medical excuse from any participation. The medical evaluation is therefore basically designed to evaluate and conserve the existing state of health enjoyed by each student. This is not the only form structural measurement which may be desirable self-evaluative purposes. Nutritional status and body build are also important to the creation of a realistic self-image.

**Nutritional status.** College students are tremendously concerned about their appearance. They do not wish to be distinguished among their peers as being markedly overweight or underweight. Evidence of their concern may be found in the results of a study intended to classify the major problems which troubled 1000 college freshmen at The Ohio State University.9 Problems with weight control ranked sixth on the list.

There are several means available for the student to evaluate his nutritional status. The simplest form of self-evaluation may be achieved by the student observing himself, unclothed, in front of a full length mirror. While this is a subjective measure, it none the less presents an opportunity for critical analysis of the appearance as influenced

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by nutritional status. The most common objective measure of nutritional need is the use of age-height-weight tables. The disadvantage in the use of these tables is their lack of accuracy based upon the failure to consider specific body builds. The Pryor Width-Weight Tables\(^{10}\) combine the specific measures of the skeleton with the conventional age-weight factors to produce a more exacting desired weight. At least one university (Michigan State) is known to use the skin fold measure as an indication of nutritional need. Approximately one-half of the total body fat is deposited in subcutaneous tissue which can be pulled up between thumb and forefinger into a fold. The extent of the subcutaneous fat can be measured with special calipers. Use of the Pryor Width-Weight Tables and the skin fold measures are given excellent credentials in the literature. The major deterrents to their use for a core are (1) the required use of special laboratory instruments reduces the possibility of carry-over value for future use, (2) measurements performed by students who are not skilled in the techniques are generally unreliable, and (3) it is questionable that the time required for either of these techniques would justify the difference in outcome when compared with the results of the most recent age-height-weight tables.

\(^{10}\)Helen B. Pryor, *Width-Weight Tables* (Stanford, California: Stanford University Press, 1940), p. 5.
There is much scientific evidence which indicates that the nutritional need is subject to change resulting from activity. One of the specific objectives of core will be to provide opportunities for participation in activities of a vigorous nature. If a change in the body structure (nutritional status) is anticipated, it would seem appropriate to include several basic measures of body status in the initial self-evaluation. Note may be taken of such things as height, weight, and various girth measures. These measures require no special laboratory equipment, are easily administered by the student, require a minimum of time, and are sufficient to quantitate the degree of change in nutritional status resulting from vigorous exercise.

Body build. Earlier statements of the general status and needs of students noted the fact that they exhibit a wide range of body types. The identification and classification of the student's body type is believed to have some significance in the interpretation of nutritional status, potential for specific sports, as well as the general development of emotional and personality characteristics. Sheldon\(^\text{11}\) proposes the classification be made by picture comparisons with accepted classification standards. This is both time consuming and subject to gross error in

results when done by untrained students. Willgoose\textsuperscript{12} uses Sheldon's classification and proposes the use of a scale based on age, height and weight to aid the interpretation of body type (somatotype). The latter technique appears to be most suited to student use. A self evaluation of body build would be facilitated by the use of a full length photograph.

The functional measure of organic development includes posture, and specific fitness tests of the total functional operation of the body.

**Posture appraisal.** There is a long history of effort to measure and relate posture to organic development. Such efforts met with only limited success. Karpovich\textsuperscript{13} has reviewed this history and concludes that there is no scientific proof that improvement of slight irregularities of posture leads to definite improvements in the physiological functions of the body. On the other hand Cureton\textsuperscript{14} indicates that posture may have esthetic and social values that influence attitudes. If self-appraisal is to help the student develop a realistic self image, and if student needs


\textsuperscript{13}Karpovich, *loc. cit.*, p. 297.

are indeed related to a concern for a physical appearance, then it would seem important for him to see himself as others do. In so doing he may seek to alter his posture in an effort to improve the image he projects.

There are many techniques of measuring posture although few meet the criteria for self-appraisal. The technique favored by the writer combines the use of posture photographs, side and front views, with a chart illustrating evaluative procedures and common postural divergencies. These same photographs may also be used in the evaluation of nutritional status and body type. The use of photographs to evaluate posture has been sparing due to the cost involved. The writer has enjoyed success with several solutions to this problem. First, a 35 mm camera is used rather than the conventional studio-type camera normally used for this purpose. This makes a considerable savings in the cost of film. A second innovation involves the inclusion of three subjects in each view, which further reduces the per student cost by two-thirds. Posture pictures are a permanent record that may be used by the student for subsequent self-appraisals of change.

**Physical fitness tests.** The functional capacity for movement is not easily determined. Just as total fitness is made up of many diverse and interdependent components, so too is physical fitness. The individual tests which may
measure these components are likewise extensive. Hunsicker itemizes the scope of these factors as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Selected Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arm and shoulder strength</td>
<td>Pull-ups, push-ups, parallel bars, dip, rope climb.</td>
</tr>
<tr>
<td>2. Speed</td>
<td>50-yard dash, 100-yard dash.</td>
</tr>
<tr>
<td>3. Agility</td>
<td>Shuttle run, agility run.</td>
</tr>
<tr>
<td>4. Abdominal and hip strength</td>
<td>Sit-ups, sit-ups with knees folded, 2-minute sit-ups.</td>
</tr>
<tr>
<td>5. Flexibility</td>
<td>Trunk flexion standing, trunk flexion sitting, trunk flexion (prone position).</td>
</tr>
<tr>
<td>6. Cardio-respiratory endurance</td>
<td>600-yard run, half-mile run, mile run, 5-minute step test.</td>
</tr>
<tr>
<td>7. Explosive power</td>
<td>Standing broad jump, vertical jump.</td>
</tr>
<tr>
<td>8. Static strength</td>
<td>Grip strength, back lift, leg lift.</td>
</tr>
<tr>
<td>10. Muscular endurance</td>
<td>Push-ups, chest raisings (prone position, hands behind neck, legs held down), V-sit (against time).</td>
</tr>
</tbody>
</table>

Limitations in the time required to administer tests in each of the components has led to the development of numerous batteries of tests designed to measure a selected number of components. Some rely upon as few as three or four test items. While virtually none of the short test

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batteries will adequately measure all the components of physical fitness, this does not mean that the shorter tests are useless. A similar situation exists with regard to medical examination. The average medical examination for physical education classification purposes may be less searching than the probing clinical analysis characterizing the medical examination given in the hospital. Both examinations have value, but in the first case the doctor would have to interpret the findings with caution due to the limited information available.

A personal examination of many physical fitness test batteries used in college core programs today indicates a wide divergence in both the number and selection of test items. The alternatives for content are therefore centered in a determination of the number of physical fitness components to be measured, and the selection of specific test items to achieve this task. Karpovich\(^{16}\) is eminently well qualified to make a judgment and suggests a test battery composed of (1) standing broad jump or jump reach, (2) sit-ups, (3) push-ups, and (4) a fast step-up and down test to measure cardiorespiratory function under stress. This test battery is certainly basic and satisfies the criteria proposed for test evaluation. The writer feels, however, that a more extensive profile is desirable and feasible in the core pattern.

\(^{16}\)Karpovich, loc. cit., p. 289.
Fleishman\textsuperscript{17} provides the most recent research in the determination of physical fitness. Using performance records of 20,000 young people he proposes a test battery which includes (1) extent flexibility test, (2) dynamic flexibility test, (3) shuttle run, (4) softball throw, (5) grip strength, (6) pull-ups, (7) leg lifts, (8) cable jump test, and (9) balance test. While the norms developed do not apply to college students, the study is relevant because it does provide, with extensive research and a scholarly manner, the latest thoughts regarding the number and kind of tests desired to assess physical fitness.

The most significant battery of tests for use in a college core appears to be the test proposed by the American Association for Health, Physical Education, and Recreation. The seven item test includes (1) pull-up, (2) sit-up, (3) standing broad jump, (4) 50-yard dash, (5) shuttle run, (6) softball throw for distance, and (7) 600-yard run-walk.\textsuperscript{18} This test battery is readily seen to be more comprehensive than the one proposed by Karpovich and shorter than Fleishmans' list. Comparison of the seven test items to the ten components of physical fitness reveals that six of the


AAHPER tests measure seven of the components of fitness. This test also has the advantage of providing national norms based upon the performance of 2,200 college freshmen.

The criteria that are considered most suitable for the student self-evaluation of functional physical fitness seems to be centered basically in the AAHPER Youth Fitness Test. There are, however, several changes that may strengthen the use of this test. There appears to be little need for the softball throw, which measures explosive power, when this component is adequately measured with the standing broad jump. Substitution with a grip strength test (static strength) would reinforce the test battery by adding the measure of an extra component. A second change would involve the 600-yard run-walk. In some states weather conditions may not permit the use of this test in the winter. The use of the step test recommended by Karpovich would appear to be a desirable substitute or complimentary measure of cardio-respiratory fitness.

A synthesis of the self-evaluative content which is proposed for the measurement of organic development may therefore be seen to include a broad range of evaluative criteria and technique. A composite outline may be used to summarize the scope.
**Content** | **Method or Technique**
---|---
1. Medical status | Physical examination and medical history
2. Nutritional status | Measures of height, weight, and girths of chest, bicep, waist, and calf. Interpretations by most appropriate age-height-weight chart, also subjective use of photograph.
3. Body type evaluation | Use of appropriate charts for calculation and photographs.
4. Postural status | Posture pictures. Interpretation with appropriate charts.
5. Physical (functional) fitness status | A test battery composed of: pull-ups, sit-ups, standing broad jump, 50-yard dash, grip strength, and 600-yard run-walk or step test.

How shall the results of a physical fitness appraisal be used? Common practice, as indicated in a survey by Davis,\(^\text{19}\) reveals that test results are most frequently used to enforce physical fitness standards before graduation, to require conditioning courses if students fail to pass the test, and as a criteria for grading purposes.

Students who are most likely to rank low on physical fitness tests are those who need vigorous activity the most but who, for a variety of reasons, fail to satisfy this need. It is safe to assume that in each case an attitude

has developed which is not conducive to activity participation. The greatest need of these students is not physical fitness, but rather a change in attitude that will lead to more participation. When this is achieved all physical education objectives are achieved, including physical fitness. Students laboring to meet a physical fitness standard are not likely to develop a more positive attitude toward the future use of leisure time. There is also reason to question the validity of such a requirement when such a wide range of physical potential exists among students.

While a set standard requirement is not generally defensible, all physical education core programs should exhibit a concern for those students who rate exceptionally low in physical fitness (below the twentieth percentile). The various self-appraisal tests are intended to serve a diagnostic purpose. It seems logical to assume that when a student is diagnosed to have an exceptional and immediate need for organic development, it is the responsibility of the physical education department to provide opportunities to satisfy that need and see that he takes the first step in that direction. On the basis of this assumption the writer proposes that each student with a low fitness rating must take his first activity choice from among a list sports requiring vigorous participation. Notice should be taken of the fact that students are not required to attain any set standard, nor must they take a designated conditioning
course. The requirement is designed to encourage students to take the first step toward improving their individual fitness status without unnecessarily limiting the potentials for developmental experiences in other areas of physical education.

**Neuromotor skills status.** Evaluation of the functional aspect of physical fitness is necessarily concerned with the capacity to perform movement. Physical fitness tests measure the status of those organs of the body which contribute the most to movement capacity. Neuromotor skills also measure these factors to a degree. In addition, tests of neuromotor skill require that a subject do more than exert strength or demonstrate endurance. Neuromotor skills are qualitative measures of movement calling upon all the components of physical fitness.

Yocum and Larson\(^{20}\) examined the various neuromotor skills and grouped them into three classifications: (1) the term "motor ability" is used to refer to the present level of skill performance, (2) "Motor educability" is described as the rate or degree to which motor learning takes place, and (3) the limits of motor development are referred to as the "motor capacity." The short time available in a core program requires that a choice be made among

these three. If the basic objective of student self-evaluation is to determine his current status, and if the purpose of this determination is to both motivate and evaluate the acquisition of future skills, then it would seem that a self evaluation of motor ability is desirable to achieve these goals.

What tests or techniques are the most appropriate for use to assist students in the appraisal of their status in sport skills? There are several alternatives that may be considered.

**Written self-analysis.** One appraisal technique that may be used calls for each student to test himself with a questionnaire form. On the activity questionnaire the student may be asked to review: (1) the nature and extent of participation in interscholastic and/or intramural sports; (2) personal appraisal and classification of skill status (beginner, intermediate, advanced) in those activities offered by college physical education departments: (3) professional aspirations; (4) geographic location of the country desired; and (5) a listing of the activity courses he would like to take.

This appraisal technique contains several advantages that are worthy of note. Tests of this type are comprehensive in nature, and easy to administer in a short period of time. The student is required to review his activity background in terms of his college program potential for the
future. The written record provides counselors and coaches with a source of information that may be used to encourage him into areas of the program that may otherwise escape his immediate concern. Administratively, the written self-appraisal may aid in determining the number of class sections required for given sports, the classification of students, and by the provision of data necessary to evaluate the program. The only disadvantage to this technique lies in the possibility that students with a poor activity background may be unable to evaluate their status classification with the accuracy desired for homogeneous grouping in later class sections. The University of Maryland, Michigan State University, and California State College at Hayward are all known to use the questionnaire technique in their core programs.

Fundamental motor skills. Tests of this type are designed to measure several of the basic skills of movement such as running, jumping, throwing, balancing, agility, and coordination. The nature of each test is such that while each measures a basic movement skill the test is not directly related to a refined skill movement required of a specific sport. Their use is, therefore, restricted to a classification of students according to their performance in a battery of general motor skills. Typical examples of this type of test and its use may be seen at the University of North
Carolina. Here the Barrow Motor Ability Test$^{21}$ (standing broad jump, medicine ball put, and zig zag run) is used to both appraise physical fitness and classify students into homogeneous groups. The physical fitness test which has been proposed for this study also measures many of the essential motor skill components. In light of this fact the writer believes that a separate test battery for this purpose is not justified.

Sports skill tests. Tests of this nature are used to measure the quality of skills required to actually play the specific game. The literature reveals that sport skills tests have been designed and standardized for use with college men in a relative limited number of sports. These include: badminton,$^{22}$ basketball,$^{23}$ football,$^{24}$ handball,$^{25}$

$^{21}$Mathews, _loc. cit._, p. 128.


$^{24}$David K. Brace, "Validity of Football Achievement Tests as Measures of Motor Learning and as a Partial Basis for the Selecting of Players," _Research Quarterly_, XIV (December, 1943), p. 372.

Tests of this nature are usually all constructed in the same pattern. Either two or three skills of the game are isolated for testing purposes, or if a single skill seems to dominate the criteria, this skill may undergo several repetitions of the same test. Many of the tests may be administered by the students themselves after having been thoroughly briefed upon the mechanics and rules of the test. There is every reason to believe that students are capable of handling this task and thereby arrive at reliable scores. Sport skills tests are a highly desirable technique for determining skill status and for classifying and grouping students. These tests are also frequently used as a means of evaluation for purposes of granting proficiency waivers where they are indicated. Skills tests often require a great deal of time to administer and severely limit the use of facilities by members of the class not being tested. These may be major factors that limit the use of skills tests in the core program for there are other, more expedient techniques to


evaluate and classify sport skills. The student can demonstrate skill proficiency in an area requirement. The time required to test each student on the various skills, and the often individual use of facilities required, appear to be major limitations to the use of standardized tests. Careful selections must be made in the activities to be tested for the inclusion of the twenty or more offerings of most departments is of questionable value. Not all skill evaluations need to be as extensive as the standardized tests. If a classification rating is all that is desired the instructor could accomplish this by computing a rating scale check list for each student as the class participates in the game. While this measure is subjective in nature it requires very little time, allows for maximum student participation and use of facilities, permits a broader coverage of activity areas, and is quite adequate for classification purposes.

It is apparent that the selection of a method for appraising a student of his level of activity skills is vastly influenced by the purposes conceived for the tests. The objectives of a core, and of self-appraisal, have been identified with a desire to show the scope of the program, relate knowledge, and motivate a changed behavior. If this is so, then, it would seem that the best way to achieve these goals is through a combined use of the written self analysis (questionnaire) technique, and the instructor
evaluation of the student in a broad and representative area of sports activities. The questionnaire would be used initially to allow the student to identify his various activity skill achievement levels and to classify these findings in terms of the college program. Exploratory experiences serve to further identify the sports achievement levels more realistically. Concurrent instructor evaluations of each student in selected sport activities will compliment the self-evaluative analysis of activity skills and needs. Specific sports to be evaluated will not be noted at this point. Further consideration of the content desirable for inclusion in the core will be explored at a more appropriate time later in this text.

**Social and emotional status.** Social efficiency infers the degree of development in achieving desirable standards of conduct and the ability to get along with others. There are many forces that play upon the student which influence his social efficiency. Educational experiences of both a formal and informal nature have done much to shape the attitudes and behavior of students by the time they reach college. Physical education can contribute a great deal to the social development of students. As in physical fitness and motor skills, the nature and quantity

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of the contribution that physical education makes to this area is predicated upon a determination of the present status and needs of individual students.

Social efficiency can be measured. It is made known through participation in intramural and intercollegiate sports dance games, and other physical education situations that call for a demonstration of cooperation, leadership, initiative, perserverance, courage, friendliness, honesty, and justices. Those qualities most affected by sports most frequently are grouped under headings labeled "sportsmanship" and "ethics."

Emotional stability infers an internally motivated control which is sufficient to handle the pressures that come with daily living. Lack of emotional stability may manifest itself in either of two ways. First, it may reflect in the social behavior of an individual which is characterized by extremes of either withdrawal from social intercourse or a belligerent and over aggressive behavior. The second manifestation of emotional instability may be evidenced in the degree of muscular tension experienced by the individual. The cause and effect relationship between emotional stress and muscular tension is a well documented illustration of the unity of man's emotional and physical integration. Since emotional behavior is reflected in most social efficiency tests, further consideration of measurement
devices for emotions will consider only that aspect of emotions related to muscular tension.

There are a variety of test instruments available for students to appraise their social and emotional status. These instruments are usually typed as (1) observation and rating scales, (2) situation response tests, and (3) social adjustment inventories.

Observation and rating scales. So far in physical education the tests proposed for measuring social efficiency have been confined largely to ratings based upon the judgment of observers. A similar situation exists in the evaluation of tension. In this technique the behavioral qualities being evaluated are usually rated according to a five point scale to indicate the frequency or degree of reaction. Examples of this type of evaluation might include the following:

Sportsmanship
a. Acts like a good sport toward opponents.
b. Razzes, teases, or bullies opponents.

Ethics
a. Takes decisions, wins and loses in good spirit.
b. Takes advantage of lax officiating.
c. "Crabs" about officiating.31

If the rating scale is to be used as a self evaluation technique it would be desirable for the student to take the test himself and later receive the evaluation of another person—his instructor or an objective classmate.

31 Ibid., p. 233.
Evaluations of this type serve to force the student to take a critical look at himself and to discover the attitudes that shape his association with others.

Self-rating scales are especially well suited to the task of identifying the signs of emotionally induced muscular tension. Wessel indicates the use of this measure in core program for women at Michigan State University. Van Huss proposes a rating scale in which the content is judged to be very desirable for use with college men and is, therefore, proposed for use in the content of this core.

There are several factors that appear to limit the potential use of rating scales as a technique for determining social efficiency. The great majority of observation and rating scales in physical education have been standardized for use at the elementary and high school levels. The number designed for specific use at the college level is limited. Perhaps this explains one reason for the apparent lack of student evaluation in this area as evidenced by the review of the literature mentioned earlier. A second limiting factor may be found in the time required for the instructor to get to observe and know his students. An instructor rating made at the latter part of the quarter or


semester are adequate only to evaluate student status at that time. Changes that may have occurred as a result of the core experience are therefore left unmeasured.

**Situation response test.** In this appraisal technique which may be most suited to the measurement of social efficiency, hypothetical sport situations are proposed. A listing of several reactions to the situation are then presented from which students indicate their preferred response. Unfortunately, there are currently no known examples of such tests devised for the college level. If there were, the following situation might be used:

The members of your basketball team met with the coach to mutually agree upon a set of training rules and enforcement penalties. It was agreed that these would be administered by the coach. Smoking was prohibited and the penalty agreed upon was suspension from the squad for two weeks. At a later date you observe two of the "star" performers on the team smoking. You realize that, if you exposed them, their absence from the team will surely result in the loss of several key games and any hope for the league championship. What would you do?

(a) Pretend that you did not see them and say nothing.

(b) Warn them that if you catch them smoking again you will turn them in.

(c) Talk it over individually with your teammates and go along with the consensus of their opinion.

(d) Tell the coach.

Tests of this nature, when standardized for the college level, would be of great value. They not only evaluate current social attitudes but might also serve as a focal
point for possible discussions related to situations common to the college physical education experience.

**Social adjustment inventories.** This measurement technique operates on the principle that by requesting a student to look at his problems and interests it is possible to arrive at an inventory of strong and weak characteristics.³⁴ There are various inventories available which are especially relevant for use in physical education. However, since the major purpose of the inventory technique appears to be that of pointing out the maladjusted person it seems that the inventories available are more appropriate for use by guidance counselors than by students in a self-appraisal.

What self-evaluation experiences are the most desirable to measure status and motivate change in social efficiency and emotional stability? The writer proposes two. First, a situation response test for the measurement of social status. It will be necessary that a test be designed and standardized especially for this purpose at the college level. Second, a self-rating scale to identify the degree of emotionally induced muscular tension. The test proposed by Van Huss³⁵ has been judged adequate for this purpose. Each of the two test forms is particularly

³⁴Willgoose, loc. cit., p. 356.
³⁵Van Huss, loc. cit.
well suited for student self use. The assumption is made that the content of each test will facilitate future integration with other learning experiences in the core program. Retesting to evaluate the effects of learning is both possible and desirable.

**Knowledge status.** All too often appraisal of knowledge and understanding is overlooked in physical education. Yet if the cultural objective is to be reached and if a deep appreciation for the role of sports and physical education in human life is to be obtained, a greater emphasis must be placed upon evaluations of the understandings that grow out of increased knowledge.

Since their first appearance in the 1930's written knowledge tests have been used with increasing frequency in physical education. Most of these tests are administered to evaluate the final knowledge status of students. They are seldom used to introduce a course. There appear to be several unique advantages for an introductory self-appraisal of knowledge: (1) students may determine knowledge status and in so doing become alerted to those areas where they are deficient, (2) teachers may tailor the knowledge content to fit the pre-determined needs of students, and (3) they provide an excellent basis for a later evaluation of the degree of learning that has taken place.
Standardized test instruments that are available for the measurement of knowledge appear to fall into two general classifications depending upon their content.

Sports knowledge tests. There is general agreement among physical educators that the outcomes desired from sports participation include certain knowledges and understandings peculiar to the given activity. While there are differences of opinion regarding the nature and extent of the knowledge desired most agree that minimums should include a knowledge of terminology, rules of the game, strategy, and equipment. The number of activity areas in which standardized tests have been constructed is not large. A review of the literature reveals that knowledge tests, designed for college men, are available only in golf,\(^36\) softball,\(^37\) tennis,\(^38\) and swimming.\(^39\) French\(^40\) makes a unique approach to the measurement of sports knowledge by grouping the essential elements of many sports knowledge into a single


knowledge test. The sports included were: badminton, basketball, body mechanics, canoeing, field hockey, folk dancing, golf, bowling, deck tennis, handball, shuffleboard, tennis, tetherball, rhythms, soccer, softball, swimming, tumbling, track, and field and volleyball. The test was designed specifically to measure the advancement in knowledge among college women when given before and after instruction. Mention is made of this test because of the inferred potential for use in a core program.

**Health knowledge tests.** The core has been identified with the need to enrich the understanding of students regarding the "why" of physical education. This infers that there may be a desired general content of knowledge which exceeds the limitations of knowledge desired in a given sport. The specific knowledge content of core, yet to be considered, will therefore surely include a consideration of the beneficial effects of exercise to the health of students. Examination of the many tests available for this purpose revealed two that may prove suitable. The Kilander Health Knowledge Test\(^{41}\) uses 100 multiple choice questions to evaluate knowledge in the areas of: nutrition, safety and first aid; common errors and superstitions, mental and social hygiene, personal health, community health and

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and sanitation, stimulants and depressants. This test has
gone through four revisions since 1936 and current norms are
based upon 100,000 scores. Reliability for college fresh-
men is .80. While this test carries excellent credentials
there are some parts of the content which do not seem ap-
propriate (e.g., community health and sanitation) for the
purposes of core. Only those questions which have some
relation to activity would appear to be relevant to the
core content. Stradtman and Cureton\textsuperscript{42} appear to have over-
come this objection by designing a test in the subject
matter area of physical fitness, with a special emphasis
placed upon the selection of vocabulary. Unfortunately, the
test was designed for use at the senior high school level.
Mention of this test was made to point up the need for a
test instrument of this nature suitable for college use.

What tests are preferred for use in measuring the
knowledge status of students? The assumption has been made
that the common learnings of core will include certain
selected sports. It would seem appropriate that the student
be appraised of his sports knowledge status in each of those
areas. In the light of the fact that the core experience
may be brief (2-6 class hours) it appears desirable to group
all the sports knowledge into a single omnibus test. The

\textsuperscript{42}A. D. Stradtman and T. K. Cureton, "A Physical
Fitness Knowledge Test for Secondary School Boys and Girls,"
obvious advantages would be a savings in time otherwise required to administer the tests separately. Those sport experiences which are open for student election, following the core program, should use a more comprehensive test to further evaluate status both before and after the course. When standardized tests are available they should be used and local norms established.

There is no single test instrument available that would be suited to an evaluation of the general knowledge content of core. The broad knowledge and understandings which are desired as common learning for the college student will vary in quantity and in emphasis among colleges and universities. It, therefore, becomes necessary for each physical education department to design a test instrument which best reflects the content of its unique core.

**Self-appraisal test battery.** A summary of the tests which have been proposed for the self-appraisal by students should show the extent to which core affords the opportunity for the development of a realistic self-image. It is important that students see the total picture of their status in order that each may observe the relatedness that exists among his various needs which have been indicated.

A composite profile chart is sometimes used as a method of illustrating the total picture of individual student status. Upon the completion of each measurement students are instructed to convert the raw score into a
percentile rank derived from local norms. The percentile is then plotted on the profile chart and a line graph may be constructed to illustrate the status above and below the fifty percentile. By using the same profile chart to record post class scores a comparison may be made and the overall degree of change will be apparent. The self-appraisal tests which have been proposed may be used to construct a student profile chart.

The mechanics required to administer the battery of self-appraisal tests are inherent in the selection of test instruments. Each test has been selected not only on the basis of content but also with a view to its administration. Many of the tests may be taken outside of the regular class period, especially the written appraisals. The resulting savings in class time permits a rather extensive profile and facilitates the administration of the test battery both before and after the core experiences. A second factor has been the careful selection of tests which may be administered by the student himself after a minimum of direction. It is hoped that the staff administration of tests will not only add to the savings in class time but also induce students to make comparative self-appraisal in the years to come.
| Percentile Rank | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------------|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Weight          |   |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Pull-ups        |   |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Sit-ups         |   |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Standing broad jump | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 50-yard dash    |   |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Grip strength, dom. hand | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Grip strength other hand | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 600-yard run-walk | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Step test-Pulse rate | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Emotional stability | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Social efficiency | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Sports knowledge | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Related knowledge | |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

I. Medical Rating: A_______ B_______ C_______ IV. Posture: Before_______ After_______

II. Somatotype: endo.___ meso.___ ecto.___ V. Gross Weight: ______

III. Sport skills classification: Beginner Intermediate Advanced VI. Girth: Chest_______

   Waist_______ Hips_______ Bicip_______ Calf_______
Organic conditioning

The general objectives of physical education have been stated to include the development of an improved level of organic fitness achieved through participation in vigorous activities. The core program should reflect this objective if the common and individual needs of students are to be met. Further consideration of the core content must consider what the essential characteristics are which will most effectively promote organic fitness.

Conditioning objective. The core objective for organic conditioning shall be to present progressive training techniques that may be used to change and maintain a level of fitness and to offer an experience in physical change.

Conditioning content. Development of power and endurance requires that the body be placed under stress. Walters\(^4\) states that increases in muscular strength, hypertrophy, and endurance result from an increase in the intensity of the work performed in a given time unit. This fact has become known as the overload principle.

A careful review of the literature, and personal correspondence materials reveals that overt provisions were recognized in less than half of the core programs studied. In some cases physical fitness classification tests were

given. Students falling below a stated percentile rank were then required to take a special class designed to improve their fitness status. Since the special classes for the low fit group were not provided as a common learning experience the nature of these classes will not be discussed at this point.

Among those core programs that did disclose an obvious content designed to produce a measurable change in fitness there seemed to be three basic approaches used to provide for organic overloads, namely: (1) vigorous sports activities, (2) exercise programs, and (3) a combination of sports participation and a special exercise plan.

The many components of physical fitness indicate that no single sport will satisfy the developmental needs for stress in all areas. Likewise, each sport or activity will vary greatly in its potential for producing a stressful situation in any given fitness component. Handball will improve cardio-respiratory endurance but will contribute little to the development of strength. Apparatus work in gymnastics is well suited to develop strength, especially in the upper body, but has a low potential for developing cardio-respiratory endurance. If sports are to be used for a general development of organic vigor then it is necessary to carefully select those sports which will produce stress in the areas desired. One state university in a southern
state achieves this in a one semester core by devoting five class hours each to vigorous participation in each of the following: boxing, gymnastics, track and field, and rugged games. Stressful situations conducive for the development of strength, endurance, flexibility, balance, and agility are readily apparent in the selection of the four sports indicated. A physical fitness emphasis to this degree however is not without sacrifice in the other objectives of core. The time devoted to meeting student needs in general orientation, self-appraisal, and interpretation through knowledge and understanding, is definitely influenced. Recreational sports with a carry over value are eliminated from core on the basis of their low fitness potential. A core emphasis on teaching becomes replaced with a participation emphasis in order that maximum organic development be achieved.

A second core approach to improving organic development is centered in exercise. Exercise activities designed to improve physical fitness characteristically take the form of calisthenics, weight training, cardio-vascular activities, elementary gymnastics, relays, and organized games. The exercise technique is best typified by a prominent mid-western university that utilizes the whole quarter to evaluate and improve physical fitness through participation in an exercise program and selected low organized
games. None of the traditional college sports are included in their core program. This department cites impressive statistical evidence to demonstrate the effectiveness of their fitness core. There is little reason to doubt that physical fitness can be adequately developed through the use of calisthenic type exercises and selected low organized games. The writer does, however, question the desirability of a core so narrowly conceived that it develops a transitory level of fitness at the expense of opportunities for students (1) to experience and otherwise become acquainted with the full scope of activity opportunities available for future participation, and (2) to identify individual needs and gain understandings sufficient to interpret and show the contribution physical education makes to these needs.

While the exclusive use of a programmed exercise period does help students develop habits of exercise it does so in a manner, and with an emphasis, that dilutes and limits the content of core much more than the use of vigorous sports described in the examples above.

Rejection of the exclusive use of vigorous sports, and of an exercise oriented program, poses a dilemma. How will physical fitness be developed to the degree that students may experience a measurable change? Assuming that the core content yet to be determined will include a representative number of recreational sports serves only to
deepen the dilemma. Research shows that organic development optimum capacity is seldom, if ever, obtained in classes conducted mainly for fun, relaxation and sociability.\textsuperscript{44, 45} Henschel's\textsuperscript{46} study, in particular, indicated that the active (though moderate and mild) physical recreational activities of middle-aged adults do not significantly influence physical fitness.

The third, and most recently developed, technique for developing the organic fitness of students is brought about by combining sports participation (including recreational sports) with a special exercise plan. This combination appears to solve the administrative impasse by using a fitness technique to compliment and enrich the broad purposes of core rather than to dominate the content.

The special exercise plan that is the key to a satisfactory balance between fitness and recreational sports has developed as an outgrowth of comparatively recent scientific research and new applications of the overload principle. In light of what is now known there is no reason


\textsuperscript{45}Thomas K. Cureton, "How To Get the Physical Fitness Ingredient into Sports Education--To Improve Sports and Fitness," 60th Annual Proceedings of the College Physical Education Association (Columbus, Ohio, 1957), p. 322.

\textsuperscript{46}A. Henschel, "Comparisons of Physically Active and Inactive Men, 45-54 Years of Age," \textit{Federation Proceedings} (March 1, 1951), p. 10.
to believe that all activity in a class period should be of a vigorous nature—just a brief portion of the period will suffice. Steinhaus\textsuperscript{47} reminds us that organic development is more related to the intensity than to the quantity of exercise performed. Strength increases in isolated muscles have been shown to develop at a rate of five per cent per week resulting from single daily six second exercise bouts.\textsuperscript{48, 49} Not all components of fitness are developed as readily as a strength. The President's Council on Fitness\textsuperscript{50} recommends 15 minutes of daily vigorous activity as a goal for physical education programs.

Reference to a special exercise plan infers that just one such plan exists. This is not the case. Recently three specific exercise plans have been enthusiastically received by the adult American public. There is no evidence yet of the extent they are being used in college programs.


While each plan is uniquely different from the other there are similarities among the three which distinguish them from the traditionally long list of exercises which have been advocated in the past. These similarities include a provision for (1) a relatively small number of comprehensive exercises, (2) a need for little or no equipment, (3) a limited time requirement, (4) individual differences in status and rate of development, (5) motivational factors, (6) descriptive texts, and (7) use by either men or women. The distinguishing difference between the three is to be found in the manner which the two variables, time and repetitions, are implemented.

Adult Physical Fitness is the title of the latest of the three plans to make its appearance. The descriptive pamphlet was prepared especially for adult men and women by the President's Council on Physical Fitness. Early indications of distribution rates indicate an enthusiastic reception by the American public. A second printing has been required to meet the demand in less than a year since the initial publication date. Before starting the exercise program a two minute step test is suggested as a measure of cardio-respiratory status. Five levels of achievement are provided. Each level contains a number of exercises.

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specifically selected to develop the more important components of physical fitness. A typical example would appear as follows:

<table>
<thead>
<tr>
<th>Conditioning Exercises</th>
<th>Uninterrupted Repetitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Toe touch</td>
<td>20</td>
</tr>
<tr>
<td>2. Sprinter</td>
<td>16</td>
</tr>
<tr>
<td>3. Sitting stretch</td>
<td>18</td>
</tr>
<tr>
<td>4. Push-up</td>
<td>10</td>
</tr>
<tr>
<td>5. Sit-up</td>
<td>15</td>
</tr>
<tr>
<td>6. Leg raiser</td>
<td>16 each leg</td>
</tr>
<tr>
<td>7. Flutter kick</td>
<td>40</td>
</tr>
</tbody>
</table>

Circulatory Activity

Jog-walk (jog 100, walk 100)............. 1 mile
Rope (skip 60 sec.; rest 60 sec.).... 3 series
Run in place (run 95, hop 15-2 cycles)............. 3 minutes

Time is not a factor in this program. When the individual can perform the indicated number of repetitions in each item he advances, in accordance with his own developmental rate, to the next higher level.

The second exercise program is known as, The 5BX Plan for Physical Fitness. 5BX means five basic exercises. This exercise plan was designed originally for use by the Royal Canadian Air Force, however, it soon gained widespread popularity among the general populace of Canada and the United States through the widespread distribution of a descriptive pamphlet. The pamphlet is now in its fourth

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printing and has sold over 200,000 copies. A companion plan is available for women and is known as the XBX plan. The plan for men provides six levels of performance. As in the adult physical fitness plan the five basic exercises (toe toucher, sit-up, flutter kick, push-up, and stationary runs) will vary in the number of the repetitions and performance techniques in order to make each succeeding level more difficult. The basic difference between the two exercise plans is the addition of a time requirement. Advancement in level is not permitted until the specified number of repetitions are completed in less than eleven minutes. The time limitation remains constant at all levels. The challenge is found in repetitions that are variable among the six levels.

In 1961 a pair of Englishmen, Morgan and Adamson, published a book titled *Circuit Training* which describes a third special exercise plan with a potential for core use. While the text has not enjoyed the wide general distribution that the former plans have, it has produced indications that the concepts are being used in colleges for the conditioning of students. Circuit training, like the two preceding plans, utilizes an individualized approach to exercise by providing four levels of challenge. The circuit however,


adopts a different approach to the number of repetitions in each level and to the use of time. Each performer is required to work his way three times around a circuit (level) doing repetition doses which are below his maxima—this encourages the development of stamina (by the third time around his original sub-maxima load has, through exhaustion, become maximal). When the prescribed repetitions are completed on three circuits in less than a prescribed time (10-15 minutes) advancement may be made to the next circuit level.

How should development of organic fitness be achieved in the core of physical education? The writer favors a combined approach in which sports and a special exercise program both contribute to the fitness outcomes. He would hasten to clarify however, by noting that the potential for physical fitness will be only one of the several criteria used to select the desired sports.

Implementing the combination of exercises could be achieved by grouping the less strenuous recreational sports together including a 10 minute period of vigorous (5BX or circuit plan) activity at the conclusion of each class. This would have the advantage of extending the exercise plan over a longer period of time thereby contributing to the development of an exercise habit.

There is no reason to believe that the need for organic health is any less necessary after college than it is for college students. On the contrary, there is a
multitude of scientific evidence which indicates the contributions of vigorous exercise at all age levels. The fact that the demands of daily living do not permit the busy executive to get to the tennis courts, or to the swimming pool, as often as he would like does not mean that his activity needs are any less, or that he is no longer aware of these needs. According to public opinion, only 40 adults in every 100 take any systematic exercise in addition to their work. 55 Kenney, 56 in a study of the activities of the University of Illinois graduates who had participated in the physical education program, found that the activity participated in most by its graduates was home conditioning exercises. The graduates who participated in home exercise programs undoubtedly recognized values of such exercise motivated by design or sought advice of local athletic clubs or Y.M.C.A.'s. The enthusiastic reception of The 5BX Plan and Adult Physical Fitness publications serve to further illustrate the interest and potential for carry over value that have been recognized by the general public. On that basis the physical fitness objective proposed for this core would appear to be justified.


Activity skills

Movement is the medium for learning in physical education. The quality and purpose of developmental movement experiences are, therefore, at the very heart of curricular concern. The college student fulfills a phase of his overall potential as he gains the skill to control himself, his equipment, and opponents. Physical educators are therefore in the business of developing guided muscles.57 Economy and efficiency of movement lend themselves to safe practices.

The need for recreational skills is indicated by our cultural opportunities for increased leisure time. In the attainment of neuromuscular skills the student may come to utilize his power in movement, to experience communication in a non-verbal way, and to gain release from tension through exhilaration in action.58 If a core program in physical education is to be successful it must identify those activity skills which are basic to the desired common learning outcomes.

Skills objectives. General guides for the selection of specific content serve to identify the desired outcomes of the core experience. The activities chosen must--

1. Provide for basic skills associated with personal safety and survival.


58 Joint Committee . . ., loc. cit., p. 2.
2. Include a wide range of recreational sports with carry-over value consistent with present and future needs.

Skills content. Perhaps the most clearly demonstrated need for safety and survival skills is to be found in the area of swimming. This is one of the few recreational sports where the difference between performance skill, and a lack of it, could mean life or death for the individual. Fifty per cent of the men entering the armed services in 1941-42 could not swim well enough to save their own lives.\(^{59}\) In the 15-24 year age group accidents are listed as the leading cause of death.\(^{60}\) The number of deaths by drowning is second only to those caused by motor vehicle accidents.\(^{61}\) A recent survey of college freshmen at a large mid-western university revealed that 36 per cent, nearly four out of every ten students, could not swim 100 yards.\(^{62}\) A lack of swimming skill prevents the student from enjoying, as he should, the many recreational opportunities that are available at swimming pools, rivers, and lakes. The chances are good that by denying himself these pleasures a student may also limit the future recreational scope of family activities and perhaps unwittingly endanger the lives

\(^{59}\) "The New American Myth, Physical Fitness," Scho

\(^{60}\) National Safety Council, loc. cit.

\(^{61}\) Ibid., p. 10.

\(^{62}\) Kenney, loc. cit., p. 173.
of his children by not providing them with opportunities to
learn to swim. Ability to swim well enough to save oneself,
therefore, appears to be a well established common survival
need of students.

Participation in vigorous sports has been shown to
be a definite aid to the release of tensions and thereby
contributes to emotional health and safety. The records of
individuals who develop excessive emotional tension, both on
and off the job, show greater absenteeism, more accidents,
and more psychosomatic illness. Not all tensions, how­
ever, are produced at times when they can be released by
vigorous sport participation. Jacobson has been a
leader in developing a technique of muscle control called
progressive relaxation. His plan calls first for instruc­
tion in identifying the particular muscle groups which are
under tension, then skills are taught which are conducive
to reducing the hypertonicity of the appropriate muscles.
Vigorous activity is not required of this form of tension
release. On the contrary, the object of progressive re­
lexation is to reduce neuromuscular activity. Skills in

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63 H. G. Ross, "Psychosomatic Disturbances and Their
Bearing on Workers' Efficiency," Canadian Medical Associ­

64 Edmund Jacobson, Progressive Relaxation (Chicago:

65 Edmund Jacobson, You Must Relax (New York: McGraw­
this technique can be useful in relief of muscular tension that may occur in the classroom, at home, or in the office. At the University of Wisconsin an evaluation of eighty-two students trained in relaxation (in the Physical Education Department), showed that relaxation training was effective for those students who were generally motivated and ready to take responsibility for improving themselves. The pressures that come with daily living in our increasingly complex society, and the resulting threat to health and safety, seem to demonstrate the common need for tension release opportunities and skills. There are several indications that progressive relaxation skills are being included in contemporary core programs.

Preventive skills are also associated with correct body mechanics. The basic movements for daily living involve lifting, pulling, carrying, pushing, running, and walking. In each of these activities there are appropriate


67 Bulletin of the University of Toledo-College of Education, XL (Toledo, Ohio: University of Toledo, Sept., 1962), p. 68.

68 Correspondence Materials from Joseph B. Oxendine, Chairman of the Department of Health, Physical Education, and Recreation, Temple University, April 11, 1963.

69 McBride, loc. cit., p. 43.

70 Van Huss et al., loc. cit., pp. 61-64.
skill techniques that will not only add to body efficiency but also minimize the hazards of injury inherent in movement stresses. Skills of this nature have traditionally been limited to those students who may elect to take a weight training course. The dangers inherent in working with barbells are readily apparent therefore many departments include instruction in safety skills appropriate to the weight training course content. Obviously the full range of body mechanic techniques would be limited to lifting skills. Furthermore, there is no reason to believe that only those students lifting barbells will experience the need for, or benefit from, instruction in the basic movement skills. The potentials for injury to the body, increases in muscular efficiency, and the frequency of use all seem to indicate a basic need common to all students. The time required for teaching body mechanics skills is negligible and would, therefore, seem conducive to inclusion in a core program. In spite of this fact comparatively few departments include these skills in their curriculum. When asked to note the strength of their program areas 168 department chairmen included body mechanics among the weakest.71 Michigan State

71 Cordts and Shaw, loc. cit., p. 416.
University,72 Wake Forest College73 and Toledo University74 are among those who recognize this common need for all their students.

Safety skills alternatives may also be stated to include certain first aid techniques related to participation in recreational activities. Students who participate in recreational water sports may be called upon to render first aid to a drowning victim. We are reminded that the second leading cause of accidental deaths in this age group is drowning. The skills required for effective artificial respiration are quickly learned by students and may be used in a variety of suffocation emergencies that are not limited to drowning. Control of bleeding is a second safety skill which may be called upon to meet an emergency arising out of sports participation. A bloody nose is not uncommon and may be expected to occur from any number of sports accidents. Severe bleeding from a major vessel is less frequently encountered but, as in the case of suffocation, the presence or absence of the necessary skill to control the bleeding may result in life or death. Other first aid skills which may be useful would include techniques in ankle wrapping,

72Van Huss et al., loc. cit., pp. 70-77.


74Bulletin of the University of Toledo . . ., loc. cit.
bandaging, splinting broken bones, and the transportation of injured victims. Basic skills of first aid are often taken for granted until they are needed. While the writer has been unable to find a single core program that includes one or more of these skills he is hopeful that artificial respiration, at least, may be taught in conjunction with the various swimming courses in core programs. If choices must be made among the first aid skills the common need for the techniques required for artificial respiration and the control of bleeding are the most obvious. These minimum skills may be life saving factors that have carry-over value of inestimable worth in future life.

What sports have the greatest potential for the immediate and future needs of students? If we accept student needs to include the development of improved social efficiency, physical fitness, and worthy use of leisure time then the value judgments must consider these evaluative criteria.

The choice among sports alternatives is broad. The scope of many department offerings may include instruction in 20 to 30 activity experiences. Every activity or sport taught in physical education makes some contribution to all the common needs of students. Not all, however, achieve their outcomes with equal emphasis in each area of need. The following examples may be cited: individual and dual sports usually have a high carry-over value for leisure time
use, combative sports excell in contributions made to physical fitness, team sports provide more than the normal opportunities for social development, while dance is especially suited for self expression through movement experiences. Since no single sport can satisfy all the developmental needs of students, and since the objectives of this core call for a wide range of sports skills, it becomes necessary to group the activities according to their principle contributions. Selection of subsequent specific activities from among the grouped alternatives will not only assure a recognition of all the common needs but also serves to acquaint students with the breadth of physical education opportunities.

A recent national conference report has suggested that the program offerings of a department are well rounded if they include body mechanics, aquatic sports, team games, rhythms, and individual and dual sports.75 The scope of specific activity alternatives may be identified under these headings.

<table>
<thead>
<tr>
<th>Body Mechanics</th>
<th>Aquatic Sports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posture skills for daily living</td>
<td>Diving</td>
</tr>
<tr>
<td></td>
<td>Life Saving</td>
</tr>
<tr>
<td></td>
<td>Water Skiing</td>
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<tr>
<td></td>
<td>Sailing</td>
</tr>
<tr>
<td></td>
<td>Skin Diving</td>
</tr>
<tr>
<td></td>
<td>Swimming</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rhythmatics</th>
<th>Team Games</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folk and Square dance</td>
<td>Basketball</td>
</tr>
<tr>
<td>Modern dance</td>
<td>Speedball</td>
</tr>
<tr>
<td>Social dance</td>
<td>Soccer</td>
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<tr>
<td></td>
<td>Touch football</td>
</tr>
<tr>
<td></td>
<td>Softball</td>
</tr>
<tr>
<td></td>
<td>Volleyball</td>
</tr>
<tr>
<td>Individual and Dual Sports</td>
<td></td>
</tr>
<tr>
<td>Archery</td>
<td>Handball</td>
</tr>
<tr>
<td>Badminton</td>
<td>Boxing</td>
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<tr>
<td>Bait Casting</td>
<td>Trampoline</td>
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<tr>
<td>Bowling</td>
<td>Fencing</td>
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<td></td>
<td>Judo</td>
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<td></td>
<td>Tumbling</td>
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<td></td>
<td>Golf</td>
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<td>Tennis</td>
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<td>Wrestling</td>
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<td></td>
<td>Gymnastics</td>
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<tr>
<td></td>
<td>Track &amp; Field</td>
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</tbody>
</table>

Selection from among activity alternatives will be influenced by several significant trends which reflect current student needs and interests in specific sports. Surveys indicate that there is an increased participation in individual and dual sports, and a marked decline in the election of team sports.\(^{76, 77}\) The top ten activities in participation popularity now include only three team sports (volleyball, basketball, and softball).\(^{78}\) The most frequently elected carry-over sports have been shown to include: tennis, swimming, badminton, golf, gymnastics, and wrestling.\(^{79}\) The trend is further documented in core programs at Florida


\(^{77}\) Oxendine, loc. cit., p. 36.


\(^{79}\) Ibid.
Presbyterian College\(^80\) and the University of South Florida\(^81\).

Assumptions have been made, by each of these institutions, that the high school background of college freshmen includes ample instruction in team sports. Students wishing to continue their participation in team sports are, therefore, encouraged to do so through the college intramural program. Restricting the inclusion of team sports in the core program would seem to reduce the number of vigorous activities available for selection. On the other hand, it might permit an increase in the number of carry-over sports included in the core experience. The uniqueness of physical education at the college level is more clearly demonstrated with the assumption that physical education in the high school is chiefly centered around team sports.

How many areas and what number of specific sports should be included in the core program? What depth in learning experiences is best suited to the attainment of stated objectives? Before determining the answer to these questions one must first consider the outcomes desired from the common experiences of students. Some colleges emphasize the fitness objectives and limit the remaining areas and


\(^81\)Correspondence Materials from Richard T. Bowers, Associate Professor of Physical Education, The University of South Florida, Tampa, Florida, March 3, 1964.
activities accordingly. Others see the purposes in terms of minimum competencies which are desired of the physically educated college man. A third group emphasizes an orientation to sports based upon introductory experiences.

The writer made an informal analysis of four core programs in which activity skills are obviously fitness oriented. The common learnings in these programs includes the following content: handball, boxing, wrestling, gymnastics, soccer, speedball, basketball, track and field, and selected vigorous exercises and games.\(^\text{82}\)\(^\text{, 83}\)\(^\text{, 84}\)\(^\text{, 85}\) Classification of activities under the headings above indicates the use of two of the five areas suggested by the National Conference Report. In most instances the activities appear to have only a limited carry-over value for future leisure time use.

Area requirements for minimum competency are a well established fact in current physical education programs. Since they represent learnings required of all students, at

\(^\text{82}\)Letter from Wayne C. McKinney, Instructor, Dept. of Physical Education, University of Southern California, Los Angeles, California, May 6, 1963.

\(^\text{83}\)Interview with McKalip, loc. cit.

\(^\text{84}\)Interview with Perry Johnson, Asst. Professor, Dept. of Physical Education, University of Toledo, Toledo, Ohio, May 18, 1963.

\(^\text{85}\)Interview with Ronald R. Bos, Asst. Professor, Division of Health, Physical Education, and Recreation, Kent State University, Kent, Ohio, May 9, 1963.
least to the extent of the areas selected, requirements of this nature represent one form of a core program. Fifty-eight per cent of all college students are required to take certain area pre-requisites before they enroll in elective classes.\(^86\) The most frequently required skill areas are: swimming, 55 per cent; team sports, 33 per cent; recreational activities, 20 per cent; and combatives, 20 per cent.\(^87\) Physical fitness outcomes clearly appear to dominate the motives for area requirements. Swimming is the only specific skill for which competency is noted. Thirty-three per cent of all colleges and universities require a minimum skill competency in swimming.\(^88\)

The State University of Iowa is typical of the institutions with an area requirement. Students are required to show proficiency in six of twenty-eight sports classified into three broad areas: team sports, water safety sports, and carry-over sports.\(^89\) Not all colleges have chosen to classify their area requirements with the headings suggested by the national conference report. The University of Iowa appears to exclude rhythmic activities until note is taken of the heading change from "individual and dual sports" to

\(^{87}\)Hussman et al., *loc. cit*.
\(^{88}\)Oxendine, *loc. cit.*, p. 38.
\(^{89}\)Cassidy, *loc. cit.*, p. 73.
"carry-over sports." Temple University expands their classification headings to include coeducational activities, and individual developmental activities.90 There is no way to determine which activities are most frequently selected by students under the various area requirements. The number of activities involved appears to run between four and six.

The number and nature of the classifications which guide minimum competencies on an area basis is seen to have several advantages. First, they allow students to elect specific activities according to their individual needs and interests. Secondly, they provide for both a minimum breadth and depth of physical education experiences. The chief problems associated with the requirement of minimum competencies, either by specific course or area requirement, are also two in number: (1) the scope of acquired activity interests is limited to the sports selected, and (2) careful classification procedure are required to both recognize specific skills competencies and to prevent students from electing activities in which they are already accomplished.

When the skills content of core takes as its purpose an orientation or introduction to sports then the nature and number of activities selected reflect this purpose.

90Correspondence, Oxendine, loc. cit.
Mickelson reports that 62 per cent of physical education departments with an orientation course include an introduction to activities. Michigan State University utilizes six to eight days of class time to expose the students to the sports taught in the instructional program. Their philosophy is to place a racket or bat in a man's hand and let him play as much as possible. The University of South Florida devotes twelve days to the introduction of: folk and square dance, tumbling and gymnastics, tennis, archery, and golf. This program may be expected to typically represent the nature of the introductory activity experiences provided in orientation programs. Ideally the depth of experience, if breadth is desired, should not exceed two days of participation in any given activity. The total number of sports thus covered should be well over the number of elective activity courses yet to be taken. It would seem logical that specific activities selected would encompass all the areas of common need. Oberteuffer and Ulrich have stated that in order to understand the feeling of


movement and the feeling of the moving self, it is necessary to *experience* the movement. If this is so then placing a racket or bat in a man's hand, and affording him the opportunity to briefly experience the challenges and exhilaration that come from playing the game, will truly serve to motivate him in his future activity choices.

Alternatives for the selection of skills content and methods have been presented and background material explored. On the basis of this information the following value judgments have been made to suggest the skill competencies desired for the physically educated college man.

In light of the present and future developmental needs of students the core program should provide for common learning experiences organized into four broad areas. Specific activity skills may be identified under each of the four area headings.

**Preventive Skills**
- Body Mechanics
- Progressive Relaxation
- First Aid Skills: Artificial respiration and bleeding control

**Developmental Activities**
- Wrestling
- Tumbling
- Handball

**Aquatic Skills**
- Swimming

**Recreational Skills**
- Tennis
- Archery
- Golf
- Social dance or Bowling
Close examination of the specific activity skills will reveal the following factors which explain the logic behind their selection.

1. Notice will be taken of the absence of any team sports. The writer believes the uniqueness of college physical education should lie in its emphasis upon individual and dual sports having high carry-over value for present and future needs. It is assumed that the high school experience will have accounted for adequate activity instruction in this area.

2. With the exception of team sports, all the basic areas suggested by the National Conference Report are included, even though the specific area headings show some variation.

3. Eight sport skills have been selected with a view to their use as introductory and exploratory experiences which are most frequently found in the basic course curricular pattern. A smaller number is judged to be inadequate to illustrate the scope of activity opportunities, and a larger number may unduly restrict other content objectives.

4. Exploratory common learnings in the eight sports have been planned to provide for a general orientation to the facilities. Through actual participation in sports activities students will be acquainted with the pools, courts, fields, and special gymnasium areas.
5. Roughly half of the activities are noted to be especially well suited to meet the immediate needs for vigorous activity, while the remainder serve to introduce students to activities with a high carry-over value.

6. Care was taken that specific activity selections reflect not only the needs of students but also their interests, as indicated in a recent survey.94

The writer believes that the need for personal safety, as well as the opportunities for satisfying developmental needs, are sufficient to warrant the requirement of a minimum proficiency in swimming. All students should be able to swim well enough to be comfortable in deep water. This position is also supported by the precedence of current practice which indicates that one out of every three colleges and universities across the nation has a similar requirement.95

Knowledges, understandings, and Attitudes

The last of four basic areas of common need for students has been identified to include knowledge, understandings, and attitudes. It has been shown that each student needs knowledge concerning the human body and its dependency upon exercise for the development and maintenance of physical fitness. He should understand the cultural heritage

94National Collegiate Association, loc. cit.
95Oxendine, loc. cit.
and esthetic value of activity as expressed in personal action. Proper attitudes, functional knowledge, and broad understandings appear to be even greater needs on the college level than organic power and activity skills. There is little chance that the development of organic fitness, or activity skills would occur if the student had a negative attitude toward his body. A core program should, therefore, provide opportunities for student knowledges and understandings to be harmonized with physical education goals if continuing attitudes of action are to be the outcome.

Knowledge objectives. This physical education core program shall be designed to——

1. Develop knowledge and understanding of a quality and quantity sufficient to interpret individual needs, and to relate this information to present and future activity skills participation.

2. Acquaint students with the prominent role which competition and sport play in our culture.

Knowledge content. The alternatives for knowledge content are virtually impossible to explore without first delimiting their scope. The volume of knowledge relating to organic development, social and emotional efficiency, and movement skills far exceeds the time available to teach students all that may be desired. The problem was anticipated earlier in this paper when a major limiting factor was included among the guiding principles for the general selection
of content. The principle states that all learning in core must be an active process, where each fact presented is demonstrated and experienced by the student. This statement becomes a guardian against any tendency to drift toward a traditional subject centered content.

Further limitations may be made by classifying knowledge areas as either specialized or general in nature. Those knowledges and understandings that are associated with any specific sport elected by students will be referred to as specialized knowledge. General knowledges are learning experiences which are common to all students. The content proposed for this study shall include only general knowledges.

Before dismissing specialized knowledges from further consideration several comments seem appropriate to be made at this point. While the knowledges and understandings of each elected sport will be unique to the activity, it would seem desirable that there be a general pattern which identifies the scope of comprehension in any sport a student might elect. The writer suggests that knowledge in all elective sports should include: (1) a brief history of the activity, (2) rules and courtesies, (3) purchase and care of equipment, (4) techniques and strategy, terminology, handicapping procedures, major tournaments, leading participants, and any other knowledge necessary to interpret
and appreciate information commonly found in the sport pages of newspapers.

General knowledges may be further identified as being concerned with either orientation or interpretation. Since earlier consideration was given to the selection of those common learnings designed to orient students to the total program, its nature and opportunities, nothing further will be required in this area. The content to be considered will therefore be concerned basically with an interpretation of activity outcomes.

What are the knowledges which will best aid students to interpret their individual needs and to relate this information to present and future activity participation? What understandings can be fostered which will enable students to appreciate the role that sport plays in both developing and reflecting their cultural heritage? Attempts to answer these questions are being sought with increasing frequency in physical education departments across the nation.

Examination of the related literature fails to reveal the nature of general knowledges currently included in core programs of physical education. However, as informal study based upon correspondence and personal interviews has been fruitful in gaining some idea of the topic areas which are frequently selected. Nine core programs were selected for further study on the basis of the range
of topics used in their knowledge content. The various
topics have been synthesized and listed below. The listing
serves to provide an excellent survey of the scope of know-
ledge content alternatives currently being used to enrich
student understanding.
1. A concept of total health.
2. The need for physical education.
3. Exercise and weight control.
5. Principles of training.
7. Specific applications of exercise to the professions.
10. Facts and fallacies about exercise and health.
11. Physiology of exercise.
13. Interpretation of the personal profile.
15. First Aid.
16. Behavior expected of the educated individual as a par-
ticipant and spectator.
17. Physical education in historical perspection.
18. Relaxation.
If the purposes of core are truly based upon an integration of learning in a wide range of relationships, and if general knowledge is necessary to interpret these experiences into meaningful understandings and desirable attitudes, then it would seem appropriate to consider the knowledge content alternatives in light of the activity experiences thus far proposed. Self-appraisal, organic conditioning, and numerous activity skills have been suggested as experiences in response to student need. The knowledges required to interpret and relate understandings to individual outcomes must, therefore, be identified with these experiences.

A selection of knowledge content will also be strongly influenced by the emphasis, time, and administrative methods to be used. No single department was observed to include all the topics that have been listed. This would be difficult if the total core is to avoid being dominated unduly by classroom lectures. An example of a knowledge emphasis which is unique to an institution is found at The Pennsylvania State University where the full content is centered in sports appreciation lectures and a traditional health course. Another unique emphasis is found at The University of Southern California where, in addition to lectures in other areas, attempts are made to interpret

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student activity needs in relation to the geographic place of anticipated residence and individual vocational choices. The limited sample studied by the writer revealed that the average number of knowledge topics covered by a given program was five. The low was one, a single lecture on physical fitness, and the high included thirteen areas. Those areas most frequently selected were: exercise and weight control, sports in the American culture, physiology of exercise, principles of training, and interpretations of the personal profile.

The overall time spent on knowledge content in 38 core programs surveyed by Mickelson97 revealed that 28 percent of class time was devoted to lecture in this area of the program. The nine programs surveyed by the writer produced a median class lecture rate of six per semester, indicating general agreement with the findings of Mickelson.

The number of lecture sections to be used is determined chiefly by both the scope of content desired, and by the administrative method of organizing the core experience. One such method calls for periodic substitution of lecture classes for elective activity classes. On announced days all freshmen report to a lecture hall or classroom instead of the playing fields or gymnasium. When students are assembled in large groups the presentation of lectures by

97Letter from Mickelson, loc. cit.
specialists in the department is a rather simple way of presenting the desired knowledge content. If the activity program is conducted only twice a week, however, it appears dubious that the motivational effects of frequent lecture substitutions would offset the disappointment of students in having their instruction participation periods interrupted. The use of televised lectures at times other than the class hour, and appropriate to general student viewing, might be one approach to a solution. A second answer might be to extend the two day per week requirement to three days. Florida Presbyterian College does this and utilizes the third day each week for a series of 58 lectures throughout their two year requirement, while the remaining two days each week are spent in elective sports participation. The immediately apparent advantage lies in the scope of knowledge content which may be communicated to students in this manner, while still providing the normal two classes per week of activity instruction. There are however several deterrents to general use of this core method of administering knowledge content. First, many departments have lost, or never had, a three day per week schedule for activity classes. The pressures associated with exploding knowledge in all areas of the college curriculum promises a strong
battle in response to any request for an increase in the amount of curricular time allotted physical education. A second disadvantage, even to those who are fortunate enough to have a three hour requirement per week, is the difficulty required to integrate and relate knowledges. In two of the three class hours per week students are in a wide assortment of activity experiences of their choice. The lecture content must therefore become subject centered instead of student centered, thereby losing a very essential aspect of the desired core experience.

The most frequently used method of providing for general knowledge content is the basic course. This core pattern requires that all students take a single course which includes, among other learning experiences, a prescribed number of lectures and discussions appropriate to the objectives of the course. Where general knowledges are included in core this method appears to be favored. Eight of the nine departments studied by the writer incorporated a general knowledge content into the basic course pattern. The advantages are significant. If the knowledge content selected is to be based upon the interpretation of common student needs which have been demonstrated through movement, then provisions must be made for the integration of movement experiences and knowledge. The basic course pattern makes this possible. Students may take the various self-appraisal tests and shortly thereafter learn of the knowledges that
would help each to interpret his individual needs. This example may be duplicated in any number of activity and knowledge areas. One disadvantage to the basic course method of interpreting movement needs is the limited amount of time available for this purpose. Self-appraisal testing and activity skills are content areas that require a major portion of the available time. Time taken away from actual activity participation, in order to gain knowledge, is justified only to the extent that the knowledge and understandings make immediate and future participation more meaningful.

The time distribution mentioned thus far has inferred the use of full 50 minute class lecture periods. This need not always be the case. One of the characteristics of a core program is that it utilizes large blocks of time to increase the potentials for integrating learning. If the core in physical education could be administratively planned to include a pair of two hour classes each week, then the task of integrating self testing, knowledge, and activity sports experiences within the same period would provide a highly desired setting for interpreting student needs. Another advantage is the increased flexibility provided for in the program content. Interpretive knowledge on one day might be limited to just fifteen minutes, the next day a whole hour might be desired. Yet another bonus is the gain of roughly fifteen minutes class time that would have
normally been spent in changing clothes and showering if the
double period were separated into two one hour classes.

The criteria for selecting a content of general
knowledge has been limited to the interpretation of facts
which are demonstrated through movement experiences centered
in self-appraisal, organic conditioning, and certain activity
skills. A further qualification must be made at this point
to indicate the degree of emphasis that will be placed
within the content suggestions to follow. Since student
self-appraisal includes a determination of status as measured
by a general knowledge test, the content emphasis should
reflect the extent of individual and group needs for inter-
pretations and understandings. No two groups of students
are alike. While a knowledge content has been selected on
the basis of the common needs of students, as interpreted by
the writer, it is expected that there will be differences
among groups which would indicate the need for a varying
degree of emphasis, or even content changes. The knowledges
and understandings necessary to interpret activity experi-
ences have been grouped under eight general headings for the
sake of continuity.

I. The Role of Exercise in Modern Living

A. Environmental needs
   1. Increased leisure time
   2. Affects of automation
   3. Incidence of mental illness
   4. The need for closer family ties
   5. Military needs for national security
B. Total fitness

1. Definition-discuss implications of the unity of man
2. Contributions of physical education to fitness
3. Common signs of unfitness
4. Measuring fitness

II. Personal Physical Appearance

A. Posture

1. Evaluation of posture status
2. Interpretation of needs

B. Weight Control

1. Interpretation of weight status
2. Calorie intake-expandature principle
3. Overweight: its significance and treatment
4. Exercise and weight control
5. Differences between eating to satisfy appetite, or hunger
6. Contributions of food types
7. The overweight ex-athlete
8. Food fads and fallacies

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101 Karl C. Gorman et al., Conditioning Exercises, Games, Tests (Annapolis, Md.: U.S. Naval Institute, 1960).


103 Long et al., loc. cit., pp. 95-96.


106 Hein and Ryan, loc. cit.
C. Body type\textsuperscript{107}, \textsuperscript{108}, \textsuperscript{109}
1. Appraisal of body type
2. Implications for activity participation
3. Relation to weight control problems—present and future

III. Physiology of Exercise\textsuperscript{110}, \textsuperscript{111}, \textsuperscript{112}

A. Oxygen debt
B. Second wind
C. Pain in side
D. Physiological changes in the conditioned state
   1. Heart
   2. Blood
   3. Vessels
   4. Pulse rate and recovery rate
   5. Blood Pressure
   6. Respiration rate and depth
   7. Skeletal system
   8. Nervous system
   9. Muscular system

E. Facts and fallacies about exercise
   1. Athletes heart
   2. Deep breathing exercises
   3. Strenuous exercise after a heavy meal
   4. Does exercise lengthen life?
   5. Is resistance to disease heightened?

\textsuperscript{107}Willgoose, \textit{loc. cit.}, pp. 287-327.


\textsuperscript{110}Karpovich, \textit{loc. cit.}


\textsuperscript{112}Steinhaus, \textit{loc. cit.}
F. Fatigue and recovery
1. General or chronic fatigue
2. Muscular fatigue
3. Anxiety state
4. Fatigue prevention and recuperation

IV. Safety and Survival

A. Body mechanics
1. The need for economy of effort and prevention of fatigue
2. Factors affecting mechanical efficiency
3. Principles of body mechanics

B. Stress and emotional tension
1. Causes of tension
2. Recognizing the symptoms
3. Recreation and emotional tensions
4. Relaxation and emotional tension

C. First Aid
1. Artificial respiration
2. Bleeding
3. Shock
4. Sprains and strains
5. Infection

114 Marion Williams and Herbert Lissner, Biomechanics of Human Motion (Philadelphia: W. B. Saunders Co., 1962).
V. Principles for Motor Learning120, 121, 122
   A. General-specific
   B. Transfer
   C. Retention
   D. Reminiscence
   E. Distributed vs. mass practice
   F. Whole vs. part
   G. Mental practice
   H. Speed and accuracy

VI. Principles of Training123, 124, 125, 126, 127
   A. The importance of warming-up and warming-down
      1. Flexibility
      2. Milking action of muscles
   B. The overload principle
      1. The all or none principle
   C. Use of isometric and isotonic exercises
      1. Advantages and disadvantages of each as
determined by scientific research

123Karpovich, loc. cit.
124Morehouse and Miller, loc. cit.
125Morehouse and Rasch, loc. cit.
126Steinhaus, "Some Selected Facts . . .," loc. cit.
D. Factors of conditioning
   1. Strength development
   2. Endurance development
   3. Flexibility development

E. The specificity of conditioning

F. Interval training
   1. How all variables of overload are controlled and kept constant or varied on a pre-determined schedule

G. Possible dangers of training
   1. Need for medical check-up
   2. Age factors
   3. Progression in training
   4. Need for salt, and water

VII. Sports in the American Culture 128, 129, 130

A. The Olympic ideal as it relates to Sports in America
   1. Objectives of sport
   2. What changes have taken place?

B. Leisure and its uses
   1. Self expression
   2. Occupational prestige

C. Current examples of effects of sports as a socializing agent
   1. Positive effects
   2. Negative effects

D. Ethics and sport
   1. A chance to practice democratic principles
   2. Personal conduct as an educated player and spectator
   3. Moral and ethical situations

128 Van Dalen et al., loc. cit.


130 Delbert Oberteuffer, Don Michielli, and Joseph Carlson, Sportsmanship—Whose Responsibility (Columbus: The Ohio High School Athletic Association, August, 1960).
VIII. Orientation to Sports

A. In each of the orientation activities and sports the following will be common learnings
   1. Basic rules and courtesies
   2. Equipment and facilities
   3. General nature of the activity
   4. Safety precautions.

A study of the proposed content will reveal that the selections were not made solely for the purpose of intellectualizing the content but rather to aid the student in a deeper understanding of the how and the way of physical education. Each topic heading was considered no only in the light of a need for interpreting movement outcomes but also with a thought to the potential for motivating changes in attitudinal and experience patterns.

The reader will notice that the knowledges proposed make a step toward integrating health with physical education. Nutrition and weight control, certain aspects of emotional health, first aid, and fatigue are all topics which tend to bridge the gap between these two areas. The traditional, compartmentalized, view which has resulted in a separation of these two highly interrelated areas has for too long denied a curricular recognition of the unity of man.

A recognition of the desirability of maintaining the closest possible interrelationships between activity and knowledge prompts the writer to suggest the basic course as the desired medium for instruction. A second proposal is made to utilize a twice weekly two hour block of time. A
varying portion of this time to be spent in lecture and discussion based upon an interpretation of past or future activity experiences.

When the scope of the proposed knowledge content is considered in terms of the time limitations of a basic course it becomes clear that not all of these understandings can be covered by lecture alone. One reaction to this might be to hold students increasingly responsible for their own education. In the final analysis this is the goal for which all educators strive—students who will become increasingly self-directed in seeking answers to problems of both a personal and social nature. The Report of the President's Commission on Higher Education stresses this need with the comment that, "General education will concentrate not on the mastery of specific information, but on the fullest possible development of the motives, attitudes, and habits that will enable the student to inform himself throughout life." ¹³¹

A textbook and reading assignments are indicated if students are expected to fully comprehend the depth and scope of the knowledge outlined. Lectures, thereby, become a supplement designed to clarify, amplify, and extend the understandings independently acquired by students. Appropriate educational movies and closed circuit television are

methods that may also be used to advantage in the interpretative phase of the core program.

**Guidance**

Explosions in knowledge and skyrocketing student enrollments, when compounded by the dynamic nature of our changing social needs, have created a complexity in higher education that individuals are unable to cope with alone. They need help. The nature of the aid given is generally referred to as guidance. To guide means to indicate, to point out, to show the way.\(^{132}\) In the broad aspects of guidance there is a basic concern for the uniqueness of the individual. In the face of massive social forces which tend to produce conformity, encouragement and help are needed to show students how to make wise decisions about how each will maintain his individuality and enhance his society.\(^{133}\)

Guidance, therefore, involves personal help given someone; it is designed to assist a person to decide where he wants to go, what he wants to do, or how he wants to accomplish his purpose; it assists him to solve problems that arise in his daily life. It does not solve problems for the individual.


but helps him solve them.\textsuperscript{134} The purpose of guidance is to promote the growth of the individual in self-direction.\textsuperscript{135}

Recognition of the need for guidance in higher learning is pointed up by the President's Commission on Higher Education which states:

One of the most important instruments for accomplishing the purposes of higher education outlined in this report is an effective guidance and counseling program. In mass education, counseling provides the most likely means for adapting instruction to the individual student.\textsuperscript{136}

The National Conference Report has recognized the importance of guidance in physical education with this statement:

"Guidance and counseling of students should be an integral part of the physical education program."\textsuperscript{137} The very nature of the curricular organization of core makes it particularly well suited for the guidance function. Emphasis upon a student centered content, utilization of an individualized approach to teaching methods, and the use of evaluative measures for student self-appraisal make guidance an integral part of the core pattern.

\textsuperscript{134}Jones, \textit{loc. cit.}, p. 63.


\textsuperscript{137}National Conference Report, \textit{loc. cit.}, p. 13.
Guidance objective. A function of this core shall be to provide individual counseling and guidance based upon many kinds of personal data and designed to assist the student with a wise selection of activities consistent with his needs and interests.

Guidance methods and principles. A history of the use of guidance in physical education goes back over fifty years to the time when Dr. Sargent used a combined medical and physical examination as a basis for individualizing the program for his students at Harvard.\(^{138}\) When, in the early 1920's, a major change in physical education philosophy brought about the shift away from a formal, required curriculum to an elective, sport centered curriculum, guidance became an integral part of physical education. Nearly thirty years ago Hughes\(^{139}\) called for guidance in physical education to provide personal help in assisting a student decide where he wants to go, what he wants to do, and how he can solve his problems. Since that time guidance has come to be considered as a nearly universal function which is associated with physical education instruction. Currently, a nation wide survey revealed that the guidance and counseling of students is a part of the program in 84 per

\(^{138}\) Bennett, "The Contributions of Dr. Sargent . . .," \textit{loc. cit.}, p. 65.

\(^{139}\) Hughes, \textit{loc. cit.}
pent of our colleges and universities. Guiding students is, therefore, not a function limited to core. There are, however, several aspects of a core curricular organization which make significant contributions to the quality of guidance received by students.

Unlike the preceding areas of inquiry, guidance has no content alternatives to be considered. There are no common learnings such as were identified in the areas of knowledge and skill. Guidance is a method of teaching which utilizes many techniques to perform its services. These services include providing the individual with cumulative evidence about his abilities, interests, growth, development, and limitations. The alternatives for consideration in guidance are, therefore, chiefly concerned with collecting pertinent information which best identified the needs and interests of individual students, and determining the manner in which students are counseled.

Much of the groundwork necessary for counseling and guiding students has been provided for in the previous determination of self-appraisal criteria. Measurement devices for student appraisal have been selected and are seen to include a rating scale, personal inventory, questionnaire, physical examination, certain body measures, in addition to

140 Cordts and Shaw, loc. cit., p. 414.
141 Smith, loc. cit., p. 5.
specific written and performance tests. The information received from the self-appraisal is designed not only to provide each student with a measure of his developmental needs, but also to assist the instructor in his function as a guidance counselor.

One of the principles of learning relating to guidance is that students solve life's problems only to the degree they are capable of understanding themselves and directing their own actions.\(^{142}\) If this is so, then the knowledge content of core also helps lay the groundwork for guidance. As students use knowledge to interpret their status and gain skill in identifying individual activity needs they may be expected to depend less upon others for direction.

Guidance is a continuing process. It begins with the first semester of physical education taken by the student and continues for each semester thereafter with the emphasis diminishing as the student develops increasing competency in self-direction. With each succeeding semester the student is likely to have a different activity instructor who is unfamiliar with his status and background. If guidance is to be an integral part of every activity class, then appropriate information about each student should be readily

available to the instructor. A guidance program cannot function without some kind of record system.

Many colleges use a combined guidance and student record form to document the information deemed necessary for counseling purposes. The information most frequently kept on student record forms has been surveyed to include: activities taken in college, 60 per cent; medical examination classification, 55 per cent; grade record, 51 per cent; swimming proficiency and classification, 47 per cent; testing and recommendations, 42 per cent; high school physical education participation, 23 per cent; activities recommended to be taken, 23 per cent; and conferences, 5 per cent.\textsuperscript{143}

If the records of this nation-wide sample of physical education programs truly reflect the degree of guidance concern, then it is interesting to note that over 75 per cent of the departments fail to consider the activity background, or to make recommendations that point up the individual needs of students. One might guess that the failure to make specific activity recommendations is often due to the lack of sufficient knowledge about the background and status of students. The writer believes that the use of a combined student record and guidance card is both wise and prudent. In the presence of sufficient information it provides a permanent record of the student, his status, his needs, and

\textsuperscript{143}\textsuperscript{143}Cordts and Shaw, \textit{loc. cit.}, p. 411.
his progress. Changing activity instructors in no way diminishes the effectiveness of guidance when each has access to all the basic evidence necessary to interpret a student's performance and counsel him in light of his current needs.

What specific facts are necessary to provide sufficient evidence of student needs and interests for guidance purposes? It would seem logical that the facts necessary for students to develop a realistic self-image should be recorded. Guidance counselors may then study the appraisal results and thereby assist the student in a further interpretation of his individual needs. The combined guidance—student record should therefore include the following factual evidence of student needs:

**Organic Health Needs**

<table>
<thead>
<tr>
<th>Information Recorded</th>
<th>Medical examination</th>
<th>Classification</th>
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<tbody>
<tr>
<td></td>
<td>Nutritional status</td>
<td>Per cent over or under weight</td>
</tr>
<tr>
<td></td>
<td>Body type</td>
<td>Classification</td>
</tr>
<tr>
<td></td>
<td>Posture</td>
<td>Noticeable deviations</td>
</tr>
<tr>
<td></td>
<td>Physical fitness test</td>
<td>Percentile rank</td>
</tr>
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**Social and Emotional Needs**

<table>
<thead>
<tr>
<th>Social efficiency test</th>
<th>Percentile rank</th>
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<tr>
<td>Emotional stress test</td>
<td>Percentile rank</td>
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</table>

**Activity Skills Needs**

<table>
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<tr>
<th>Self-analysis</th>
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<tbody>
<tr>
<td>Intramural and varsity sports background...</td>
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<tr>
<td>General activities background...</td>
</tr>
<tr>
<td>Professional aspirations...</td>
</tr>
<tr>
<td>Geographic location of expected residence...</td>
</tr>
<tr>
<td>Activities he would like to learn in college...</td>
</tr>
</tbody>
</table>
Instructor Analysis

Swimming, tennis, golf, handball, wrestling, tumbling, bowling, archery, and social dance...........Classified

Knowledge Needs

General knowledge test..........................Percentile rank

Continuing use of the guidance and student record card may be enhanced with provisions for noting the following additional information: activity courses recommended, courses taken, grades received, and instructor's comments. Preservation of the cards and analysis of information may serve as a useful tool for helping program planners remain sensitive to the changing needs of students. Records of this type are also helpful as one of several means for evaluating the effectiveness of the core program.

The guidance function in physical education appears to revolve around two different aspects of student need. The first is identified with future student elections of activity courses. A second area of guidance need is observed to deal with problems of a more personal nature.

Guidance in physical education implies a choice. Indeed, without opportunities to make value judgments, and to test the validity of these judgments, the development of student self-direction would surely be stifled. At first glance a core curriculum appears as a threat to opportunities for student election. A concern with common learnings and
minimum competency can be, and sometimes is, overdone to the exclusion of free choice. Herein lies a problem which is central to the determination of all core programs. How much knowledge and skill should be required?

There is a certain tidiness about a core program heavily structured with requirements that appeals to some administrators. Outcomes of the program are more predictable and uniform, scheduling is simplified, and the common needs of students (especially fitness) are served better. On the other hand, with the student rather than the course as a core of physical education, the problem is an earnest one. In the absence of specific requirements students do not always seek guidance and advice. They do not always discover alternatives, to weigh them before making a decision. Under these circumstances it is not uncommon for students to elect an activity course because it happens to come at a convenient hour, does not require a change of clothes, or is notoriously easy. In a study done


at Pennsylvania State University, Singer\textsuperscript{146} observed that student interests, as expressed in activity preferences, are not the most satisfactory basis for activity selection.

The writer believes that the solution cannot be settled on an either or basis. Either a total requirement may be used as practiced in the early history of physical education, or unrestricted activity elections such as may be found in many sports centered programs of our day. The ultimate answer to the problem will require a decision upon the degree of requirement desired.

Among the guiding principles listed for this core program the belief was stated that content should be based upon expert educational opinion as well as student interests. Certainly no responsible educator says that the student is to do what he wants to do—rather, that he should want what he does.\textsuperscript{147} If this is so then the purposes of core and the function of guidance is to identify needs and in so doing create an attitude that generates an interest in satisfying the felt needs. Guidance involves both helping the student adjust to a required pattern and also adjusting the pattern


to fit the student.\textsuperscript{148} When this two-way responsibility for guidance is accepted there is a greater likelihood that a proper balance will be struck between student choice and core requirements.

A strictly administrative view of guidance in activity selection is sometimes dominated by a concern that students register and actually take those courses which have been prescribed by the department. If guidance does, in fact, involve a free choice from among activity alternatives then the central guidance function of each instructor must be to assist each student with his evaluation of alternatives.

Exploration of the guidance function has thus far been restricted to matters of a curricular nature. Physical education teachers can also perform a great service to students with problems of a more personal nature. Jaeger and Slocum\textsuperscript{149} have recorded findings which indicate that students come to their physical education teachers with a great variety of problems and that a large percentage of physical education teachers carry on these responsibilities in connection with the more formal activities of the school. Personal guidance contacts in over six years of college physical

\textsuperscript{148} Assoc. for Supervision of Curriculum Development, \textit{loc. cit.}, p. 85.

education have provided the writer with may indications of the student need for counseling of this nature. If the rapport that exists between instructor and student is one which inspires mutual confidence and respect the nature of counseling may include both academic and personal problems.

The methods of counseling students provide little choice among alternatives. Conferences may take either on an individual or group basis. A student centered curriculum, such as found in core, is predicated upon recognizing the uniqueness of the individual, his status, needs, and interests. The desirability and need for individual guidance is clearly indicated. A careful study of the literature, and many correspondence materials, fails to disclose specific administrative provisions that accomplish this need among core programs. Individual guidance can be achieved in several ways. The most predictable type calls for a scheduled interview. Many colleges and universities make some provision in the teaching load of instructors for counseling students. All too frequently the time allotted is insufficient to provide scheduled conferences for all students, therefore, the scheduled interview is generally reserved for those students with special problems that can not be handled in a more conventional nature.

There are many opportunities for individual guidance in an informal setting, wherever student and instructor chance to meet. The extent of guidance contacts made in
this manner is largely influenced by the rapport that exists between teacher and students. Perhaps more counseling and guidance is done in this manner, and with more effect upon changed behavior, than any other method.

Group guidance requires the recognition of common goals and is not to be confused with the first where the student is helped to state his own goals and to plan for achieving them. The knowledge content of core is one form of group guidance in which lectures and discussions are devoted to interpreting the common needs of students. It is not unlikely that an awareness of individual status, and the newly acquired power to interpret his status in terms of immediate needs, might bring the student to the point of seeking individual guidance.

A significant and useful guidance technique for core has been outlined by Van Huss. With a minimum of direction students are able to use this technique to independently arrive at an objective measure for choosing among activity alternatives which are rated according to individual needs.

The authors have listed a large number of activities and rated each with numbers according to the contribution the activity makes to physical fitness, emotional stability, social efficiency, and body type. Each student is then asked to give a personal rating for each activity in terms

150Van Huss et al., loc. cit., p. 118-121.
of its judged contribution when related to his future occupation, future residence, and present skill levels. By simply totaling the ratings for each activity students may objectively compare the varying degrees that activity alternatives satisfy present and future needs. An abbreviated example of the self-guidance for follows (desirability rating runs from a low of 1 to a high of 5):

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<thead>
<tr>
<th>Present Needs</th>
<th>Body Type</th>
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<td>a  a  a  p  p  p</td>
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<tr>
<td>Activities</td>
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<tr>
<th>Carry-Over Value</th>
<th>Future Occupation</th>
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<tr>
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<th>Bowling</th>
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<th>Mountain Climbing</th>
<th>Swimming</th>
<th>Wrestling</th>
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<td>Activities</td>
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<td>(5)</td>
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<table>
<thead>
<tr>
<th>Future Residence</th>
<th>Present Skill</th>
<th>Total</th>
<th>Activities to Take</th>
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It is significant to note that interests of students are not accorded a rating. Self guidance charts of this nature appear to have several advantages for use with a core
program. Students are forced to review the criteria that should serve as the basis for all activity selections. Differences among alternative choices are also easily quantitated. Use of the self-guidance technique, when supported with facts and understandings about personal needs, should bring students closer to the development of enlightened self-direction. While there are advantages in the use of self-guidance ratings, there are also several cautions which must be noted. The ratings are personalized only in three of seven areas. Therefore, students with one or more gross needs in the areas of physical fitness, emotional stability, or social efficiency would fail to have these needs accurately quantitated unless they selection only those activities that rate high in the area of greatest present need. This guidance technique has merit only to the extent that it supports more extensive evidence based upon a self-appraisal of status and a thorough understanding of individual needs.

The continuing need for help indicates that guidance should be an integral function of all physical education classes, however, the greatest need appears to be early in the physical education experience. Students should have the benefit of counsel before they begin that phase of the program marked by a free choice of activities. If developmental needs of each individual are to be satisfied through
appropriate activity choices, then the instructor and student should jointly consider an activity program which may be tentatively projected to serve this purpose.

Basic principles which outline the role of guidance in this core program have been summarized as follows:

1. Student self-appraisal of status, and understanding sufficient to interpret needs, provides a necessary groundwork for effective guidance.

2. Guidance implies free choice which affords the opportunity to make and test value judgments.

3. Techniques of guidance should be centered around individual student-teacher contacts, supplemented with group counseling and use of certain self-guideing methods.

4. Instructors should be qualified and interested in serving individual guidance needs of both an academic and personal nature.

5. Each student should be counseled to keep his total experience spread as widely as possible. If he has had considerable experience in an activity, he should not schedule that activity for instruction.

6. Guidance emphasis should be directed to the period of need prior to student entry into the elective program.

In the light of a need for early guidance, and provision for an extensive self-appraisal and interpretation of individual needs, the basic course curricular organization
has been judged to hold the greatest potential for satisfying the guidance objective of this study. Careful consideration of core patterns based upon specific activity requirements, or area requirements, failed to match the potential of the basic course.

Implementation

Selecting common learnings desired to identify the physically educated college man would be a simple task if content could be considered independent of the total program. This cannot be done, however, since the core content must be designed fit certain local criteria which may include various administrative factors such as: the use of a quarter or semester system, the extent of the physical education requirement, the number of class instruction periods each week, the amount of time assigned to each class period, and other limiting factors relating to facilities, equipment, and staff. Throughout the following study of implementation alternatives an attempt will be made to evaluate the potentials for use in terms of the more prevalent administrative settings.

Determining the core pattern

The advantages of several core patterns have been explored thus far in light of the contribution each pattern makes to the limited content objectives being considered.
Program objectives have been stated in the areas of self-appraisal, conditioning, activity skills, knowledge, and guidance. The major task is now one of determining the structure of core which will best serve all the stated objectives. Rather than restate many of the facts which have been previously cited, the writer will confine himself to a summary of the information necessary to make appropriate value judgments for implementing the proposed core content.

Among the several patterns of core which are currently being used there is one which has become known as the specific activity requirement. In this core pattern one or more activities are selected by the curriculum builder for all students to take. The requirement may range from one stated activity to a totally structured program.

Evaluation of this core pattern reveals that the chief advantage to its use appears to be administrative. The requirement of one or more specific activity classes for all students assures relative ease in scheduling classes, facilities, and staff. Emphasis upon a certain program outcome, such as the development of organic fitness, is also facilitated by this method of organization. There is, however, much to be said from a negative viewpoint. Comparison with the characteristics that distinguish core programs reveals this to be a core pattern only in the sense that it proposes common learnings. In fact the blanket requirement of specific courses appears to be in direct
violation of a central purpose of all core programs. When all students are required to take the same specific courses it tends to deny their uniqueness as individuals. Differences in status, needs, and interests become secondary concerns in favor of one or more content centered activity objectives. In light of the deficiencies noted, as well as the anticipated difficulty implementing the various aspects of self-appraisal, knowledge, and guidance, a specific activity core pattern is seen to hold little promise for the purposes of this study.

Area requirements comprise the second general core pattern frequently used today. Examples of this type of program have previously been cited to illustrate how students are free to elect activities from among several broad area headings. The major strength of this curricular organization, when evaluated in context of proposed content objectives, is the assurance of balance in the breadth and depth of acquired skills. Students are, thereby, acquainted with representative types of physical education.

Further evaluation of this pattern reveals a major disadvantage which limits its effectiveness. Area requirements make no administrative provision for general knowledges that might broaden the student's understanding and appreciation of the role that physical education plays in personal health and social development. While it is possible that a limited degree of individual student appraisal
and guidance may be included with the various activities chosen by students, the elective feature of area requirements is not generally compatible with attempts to incorporate common learnings.

The basic course has been described as a core pattern which requires that all students take an introductory course as a prerequisite to the election of activities. Common learnings organized in this pattern are most frequently referred to as orientation courses by the literature.

The orientation course method of organizing common learning experiences is particularly well suited to the implementation of content proposed in this study. The administrative potential appears adequate to provide for (1) general orientation to the program, (2) extensive self appraisals by students, (3) organic conditioning skills, (4) exploratory activity experiences, (5) interpretative knowledges, and (6) meaningful guidance. Combining the various aspects of content into one orientation course would seem to facilitate a high degree of integration and relatedness among the various learning experiences. The content proposed, when organized in an orientation course pattern, does indeed satisfy the concept of a purposeful core experience by providing a center around which other curricular experiences in physical education revolve; it becomes a basis for subject matter to be selected, skills developed, and understandings acquired.
The orientation course core is not without limitations relating to implementation. One problem grows out of attempts to enrich content by holding students responsible for certain general knowledges. Use of a textbook and homework assignments have been implied. It is not unlikely that students may become antagonistic to the core program because too much work is required for a course which is often granted one unit of credit, or less.

The second problem is somewhat related to the first. Activity periods are usually so limited that there is scarcely time to include testing, lecture, discussion, and activity participation. Many departments offer activity instruction only twice per week for one quarter. When the fifty-minute periods are apportioned to allow for dressing and showers, the time remaining for instruction is just thirty-five minutes. The time required to get too and from certain facilities, and to make necessary announcements, may make further inroads into the thirty-five minutes for instruction. The availability of so little time certainly appears to be prohibitive to a variety of learning experiences in any given class period.

The two problems of implementation that limit the use and effectiveness of an orientation course are formidable, but not insurmountable. The writer believes that a potential for service to individual student needs, and consequent enrichment of the total physical education program,
provides sufficient incentive to resolve the problems. Two basic needs appear to point the way to possible solutions: (1) the need for more credits and (2) a larger block of time.

There is little hope for success in securing increases in credit or time allotments within the overall general education curricular structure. Physical education is not the only discipline affected by the current explosion of knowledge. Every college department sensitive to the advance of knowledge in their area is equally desirous of more time in the curriculum. The contest for additional time and credit is, therefore, hotly contested and seldom productive for physical education.

The only alternative appears to lie within the structure and use of existing general education requirements in physical education. There are two possible combinations which may facilitate the implementation and effectiveness of an orientation type core. In the first, a department may choose to combine the credit and time required for two activity courses into one basic course. The doubled credit would justify the requirement of more homework preparation. A second advantage lies in doubling the number of class periods each week. This is conducive to the implementation of larger blocks of class time.
The chief disadvantage to doubling up on two activity courses is the loss of one elective activity from the general education requirement of physical education. However, only the elective aspect is lost. The overall amount of time and activity is preserved in the concentration of two courses. This may indeed be a small price to pay for the advantages gained. Physical education departments organized on the quarter system, and having a two year requirement, are least affected. Combining courses would be of doubtful value for departments having a some year physical education requirement.

A second internal adjustment that might be made is dependent upon the existence of a single credit personal health course requirement. If a health course was combined with a physical education course, then the advantages for implementing an orientation-type core are similar to those described in the first proposed combination. The writer has learned that the Physical Education Department of the University of Toledo is currently contemplating the use of this administrative device for implementing a basic course program. A review of the common learning content proposed in this study will remind the reader that many health knowledges and concepts have been included because of a recognized need to show the relationships between health and physical activity. Combining the two classes permits an even greater opportunity for making the relationships more meaningful.
This combination is especially well suited to implementing a basic course in departments having only a one year require-
ment.

Combinations of the nature proposed are further sup-
ported by a general trend in this direction among curriculum planners.151 In the face of vast new amounts of factual knowledge there is an increasing effort to avoid compart-
mentalization by combining courses in order to integrate facts and develop broad concepts. Courses carrying just one or two units of credit are especially susceptible to pres-
sures for integration.

A fourth common pattern for organizing common learn-
ing experiences is achieved by combining the strengths of the area and orientation course requirements. The Univer-
sity of Maryland is typical of the several programs studied with this type of curricular organization. Each student is required to take a one semester course which is followed by a different area requirement in each of the three remaining semesters. Programs of this type are best suited for use by departments with a two year physical education require-
ment.

The combined core pattern contains all the advantages and disadvantages inherent in each pattern when considered separately. The union of these two core types appears to

151 Davis, loc. cit.
assure the broadest possible base for common learnings while also providing a measure of student choice. Orientation course requirements are limited to the content embodied in that single course. When area requirements supplement the basic course it becomes possible to extend control over student electives. This may be especially desirable where minimum competencies are stated as a core requirement.

On the other hand, this combination of requirements may be superfluous. If the basic course is effective in orienting students to the scope of activity opportunities available in the program, then the use of an area requirement for this purpose would be unnecessarily repetitive. The major purpose of an orientation course is to inform, motivate, and guide students in order that they may become more self directed in selecting activity pursuits appropriate to their individual needs. If this purpose is achieved, and the guidance function is effective, then it is logical to expect that students should be permitted to test their value judgments without benefit of area restrictions.

A careful analysis of core pattern alternatives, when viewed against the backdrop of program objectives and content, leads to the proposal of a combined orientation course and limited area requirement for this study. Two different administrative approaches to the combined patterns are suggested in order to recognize the difference in educational opportunity that exists between physical education
departments with a two year requirement and those with a one year program. In each instance an orientation course will be required of all students as an initial experience in physical education. The differences lie in the extent of area requirement.

Departments having a two year program will require students to elect one activity from each of three areas, namely: aquatics, developmental sports, and recreational sports. All students, including those with low organic fitness ratings and nonswimmers, will be required to interpret their individual needs in terms of an activity course in depth in each of these areas. In the preceding orientation course brief exploratory experiences will introduce several sports opportunities that are typical of many which may be elected in each area. The remaining activity choices, normally three on a semester plan or two in the quarter system, will be without area requirements in order that students may pursue their needs and interests with a decreasing degree of guidance.

Departments limited to a one year program do not provide sufficient time for the three area requirements described above. Only two chances to elect activities of their choice remain for students following the basic
introductory course. The area requirement phase of a one year core pattern should therefore be administered in the following manner:

1. Early in the term, and again at the conclusion of the basic course, all students will be given a physical fitness test. Those who remain below a predetermined minimum percentile on the final test will be required to elect their first activity from the developmental sports area.

2. Students failing to demonstrate a minimum swimming proficiency, as classified in the orientation course, will be required to take a swimming course. Swimming may also be used to satisfy the developmental sports area requirement for the low fitness group.

3. The majority of students who do not have significant needs in these areas will be permitted unrestricted elections following the orientation course.

It is further suggested that in either instance a minimum goal of four hours per week, arranged in two hour time blocks, be used as a guide for implementing of the orientation course.

**Instructional management**

Should co-educational experiences in physical education be a part of the common learning experience for men? If so, how would it be achieved within the core pattern that has been proposed? Answers to these questions will have a
direct bearing upon the instructional management required to implement the program.

A recognition of the common need college students have for co-educational activity instruction has been widely documented. The Educational Policies Commission, in their publication *School Athletics; Problems and Policies*\(^{152}\) recommends the co-recreational program be encouraged. The term co-recreational is used but the implication appears to be co-education. The National Conference Report titled *Physical Education for College Men and Women* states that the program should be planned to "teach men and women to play together for continuing enjoyment and understanding . . . ."\(^{153}\) Students themselves are not unmindful of the need. In a study reported by Mason,\(^{154}\) 85 per cent of the men sampled at The Ohio State University were in favor of co-educational classes. At the University of Kansas, where there is no physical education requirement for all students, 54 per cent of the men electing to take a class chose one involving


co-educational instruction. A clue to the reasons for preferring co-educational classes have been provided in yet another study by Cousins. Comments of 164 students favoring co-educational classes were listed in order of frequency of mention as follows:

1. Aid social development
2. More interesting and enjoyable
3. Sportsmanship improved
4. Personal appearance improved
5. A natural condition
6. More conducive to learning

The first reason cited for preferring co-educational instruction is significant because it demonstrates student recognition of a personal need for which the physical education program is vitally concerned. All the reasons appear to relate directly to the purposes and goals of physical education.

Among the principles chosen to guide this study is a statement to the effect that the physical education core program should provide opportunities for co-educational

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156 George F. Cousins, "Co-educational Physical Education for the College Level?," 60th Annual Proceedings of the College Physical Education Association (Columbus, Ohio, 1957), pp. 282-3.
instruction. The proposed core pattern permits two alternatives for implementation. Co-educational instruction may be given in either the orientation course or the area requirement phase of core.

Co-education orientation course programs are not unusual. Examples may be found at Florida Presbyterian College, the University of South Florida, and California State College at Hayward. In each instance a review of the basic course content reveals an implication that the common learning needs of college women are not unlike those of men. If the core content proposed by this study were to be adapted for co-educational instruction it would require substitutions for the exploratory experiences in wrestling and handball. Judo, and track and field, might be examples of developmental sports more appropriate to both men and women. On the other hand, if the mixed group was large enough to have two instructors, a woman and man, the content need not be altered for the men. When the schedule called for wrestling and handball the mixed groups may be segregated and the women separately orientated to developmental activities unique to their sex such as perhaps modern dance. It is assumed that the elective program will be comprised of corresponding courses where men and women may choose to pursue their co-educational activity interests and needs.
Area requirements may also be used to assure that all students have a common learning co-education experience. Temple University achieves this goal with a required election of one activity from a co-education sports area. A similar result may be achieved with the content proposed for this study. If all elective activities listed under the recreational sports heading were offered on a co-educational basis, then the requirement that students elect one course from this area would assure that each student had a co-education learning experience. Since a recreational sports area requirement has been recommended for only those departments have a two year program, the achievement of a co-education learning experience in this manner would be similarly restricted.

There appears to be no administrative reason to prevent the opportunities for co-education instruction in both the orientation course and a required area from being incorporated into the core of a two year program. When this is done students may have two experiences in mixed activity classes. The first experience is designed to acquaint men and women with their similar needs, and activity opportunities. The second experience encourages an initial step toward the acquisition of specific activity skills with a high social and recreational carry-over value.
The scope of the adapted program lies within the framework of the general physical education requirement. Students assigned to this program are recognized to be atypical in the sense that their participation is limited by a unique health or developmental condition. Since core is vitally concerned with the common learnings of all students, those who are atypical must also be considered in the implementation of the program.

The objectives of care are appropriate to the atypical as well as the typical. Each student experiences the need to know his potential and limitations for physical activity. He needs to understand the contributions that activity participation makes to his physical and social well being. Both students should be acquainted with the activity opportunities that are available to meet their particular needs through continued physical education instruction. A teaching emphasis upon the individual status and needs of students, rather than subject matter content, is particularly well suited to the inclusion of atypical students in the orientation phase of the core program.

Recognition of individual differences, and the need for protecting the atypical student from aggravating his condition, suggests a varying emphasis upon certain parts of the program. Numbered among the variations are the following:

1. When the pre-enrollment medical examination form indicates a possible limiting factor for participation in
physical education, the college physician will call the student in for a re-check to enrollment in the orientation course. Following the re-check a conference will be held with the student, college physician, and an adapted program specialist from the physical education department. At that time activity limitations and recommendations will be discussed with the student.

2. A personal folder containing medical information necessary for guidance and protection will be provided each instructor with an atypical student in the orientation course.

3. It is desirable that each atypical student have one person who is especially familiar with his condition, and who is qualified to provide continuing guidance throughout the physical education experience. Therefore, it is recommended that these students be assigned to orientation course sections where adapted program specialists are instructing. When the testing or activity content of the course is not appropriate to the individual status of students, then changes may be suggested by the specialist who is best qualified and the most familiar with the case.

Area requirements for the atypical student will be subject to the recommendations of the physician. Insofar as possible, the atypical student should participate with the normal student as if he had no handicap.
How can the core program in physical education be implemented in such a way that learning is made more effective? The first step in answer to this question has been the proposal of a general curricular pattern for the core content. Successive steps will be necessitated within this pattern if physical education students are to learn more, and better than ever before.

In his recent book, *Images of the Future*, Trumpp explores several alternatives for improving the quality of education through different forms of class organization and teaching techniques. Two ideas are proposed which seem to have special significance for physical education.

The first principle states that the size of the group and time allotments in a class should be dependent upon the outcomes desired. Different types of instruction that might be used under these variable conditions include large instruction groups, seminars, and laboratory instruction.

Assuming the availability of a two hour time block, it is not difficult to envision the flexible use of time allotments and class size in the orientation course. Lectures on topics concerned with the knowledge content could be as effectively delivered to two hundred students as to

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twenty five. Large instruction groups permit a consolidated use of facilities, reduction in the number of instructors needed during that period, and a better quality of instruction as the result of using teachers who are specialists in their subject area. The chief disadvantage to this teaching method is the lack of opportunity for intellectual exchange between teachers and student, and among students. With flexible programming it is possible to overcome this disadvantage by supplementing the lecture content with small group seminars. Laboratory instruction is a teaching technique that features a learn by doing approach. The basic course content most suited to this method of teaching is related to physical fitness testing, organic conditioning, and orientation to sports. Varying emphasis upon each of these areas, at different times throughout the course, promises more effective learning when time allotments and class size can be manipulated to suit the emphasis and outcomes desired.

A second principle for increasing the effectiveness of teaching calls for the utilization of staff in such a way that each instructor is always teaching what he knows best. This teaching device is most frequently achieved through the use of team teaching. The necessary administrative setting calls for two or more similar classes to be scheduled at the same time. Team teaching is seldom done in individual activity classes because it is not difficult to find qualified
specialists on the staff to teach these limited areas. When a course content becomes broad in the scope of knowledge and activity skills taught, as in the orientation course, there is a decided advantage achieved through the use of team teaching. Under conditions such as these the course is enriched and the quality of teaching improved.

The writer sees a possibility to make learning more meaningful through a combination of team teaching, and the flexible use of time allotments and classsize. Consider, if you will, the effect of scheduling four basic course sections into a single teaching unit to be called a module. If the module were organized on a two-hour time allotment, the structure might be pictured as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>30</td>
<td>1</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Students Dress</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Roll Call</td>
<td>Announcements</td>
<td>Assignments</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Lecture</td>
<td>Team Teaching</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Discussion</td>
<td>Testing, or</td>
<td>Conditioning</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>Sports Orientation</td>
<td>Sports Orientation</td>
<td>Sports Orientation</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Shower and Dress</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The example is cited to show the possibilities for increasing the effectiveness of teaching an orientation course. Special attention is invited to several features that are unique to this administrative method of implementing content.

1. Integration of learning may be achieved with great effectiveness when knowledge, testing, and activity participation can be united in each class.

2. The variety of education experiences and teaching methods in each class may be increased.

3. Co-education instruction may be provided by simply scheduling women for two of the four class sections. From that point their sections may be either kept intact for integrated knowledge instruction and segregated for activity participation, or equally distributed throughout the four sections for a totally integrated learning experience.

4. The large group may be classified according to various indices, such as physical fitness or swimming ability, and homogenous groupings thereby achieved through assigning students to appropriate class sections within the module. Classification and grouping are especially advantageous for atypical students. They may be integrated for the knowledge phase of the course and separated for the testing and activity orientation or suited to their unique needs.
5. Staff and facility utilization requires only one instructor and one teaching station for the first forty to sixty minutes of the two hour class. The remaining three staff members and teaching stations are free for other duties and uses.

6. Within the module there are any number of variations available for the distribution of time or class sizes.

7. Possibilities for enriching the knowledge and activity participation content through team teaching are enhanced by the combined specialties of four instructors.

The number of modules that may be organized, and consequently the number of students taught, appears to be limited only by the staff size. The self contained structure of each module facilitates the scheduling of facilities and equipment. Physical education departments with scheduling problems caused by too many students and insufficient facilities may take this manner of enriching their program. By overlapping the scheduling of two modules it is possible to have one module group participating in the second (activity) phase of the two hour class while the incoming module group would be simultaneously engaged in their first hour content centered in knowledges and understandings. The latter group would require a classroom or lecture hall setting while the former group used the facilities required for activity.
Audio-visual aids provide still more teaching devices that may be used for increasing the quality as well as the quantity of learning in physical education. Mention has been made of the need for a textbook as a medium for students to enrich their knowledge, understanding, and appreciation of the contributions physical education makes to the achievement of optimum capacities. At the present time the writer knows of only three general knowledge texts that have been written specifically for use with a basic course core for men. The first, written by Van Huss and others,\textsuperscript{158} was designed for use with the Michigan State University foundations course in physical education. Since the date of its publication in 1960, this text has provided a classic model for the development of many similar basic course programs in colleges and universities across the nation. Wayne State University, The University of Toledo, and California State College at Hayward are known to have used this text with their core programs. The second text to make its appearance on the market is written by Davis and Logan\textsuperscript{159} and was designed to accompany the program at The University of Southern California. The content is generally confined to a study of the beneficial effects of exercise and does not

\textsuperscript{158}Van Huss et al., loc. cit.

\textsuperscript{159}Elwood Craig Davis and Gene Logan, Biophysical Values of Muscular Activity (Dubuque, Iowa: Wm. C. Brown Company, 1961).
provide the emphasis upon testing and self-appraisal found in the former text. The most recent book to make its appearance is written by Penman\textsuperscript{160} and is unique for its organization of content which provides for programmed instruction. When the knowledge content of a course is selected first, and then an appropriate text sought, there is seldom complete satisfaction with the alternatives. One ambitious solution to the inadequacies among present texts would be the local development of one designed especially to provide background information needed to accompany the course content. On the other hand a more common reaction is to select the text that best fits the need, and then supplement the assignments with outside readings. This has the added advantage of encouraging the student to become familiar with some of the current literature in physical education. Other written materials that are recommended for use to enrich learning would include a student handbook containing essential information regarding the local program, and a text to serve as a standard source for knowledges associated with activities of the elective program.

Locally developed film strips may be used to accompany lectures and illustrate appropriate facts. They may also be used in conjunction with tape recorded lectures by specialists in the department. This technique is especially

\textsuperscript{160}Penman, loc. cit.
suitable for separately scheduled one hour classes, many of which are taught by graduate assistants. The University of Southern California has developed several strip film and tape recordings for this purpose.\textsuperscript{161} Strip film and accompanying records are also now available commercially although their subject content is limited to knowledge and skills required for specific sports. Selected uses of the content in each activity may be an effective method of introducing students to the nature of the game in the sports orientation proposed for core.

Michigan State University reports the use of closed circuit television as a modern teaching device used to present the lecture phase of their course and to introduce students to the nature of their various exploratory experiences.\textsuperscript{162} Through the use of educational television the best quality of instruction and illustrations may be achieved for all students. This medium is very effective for those departments that schedule large blocks of students for the same class hour. The module plan is very well suited to this teaching device.

\textsuperscript{161}McKinney, \textit{loc. cit.}

\textsuperscript{162}Interview with John Friedrich, Chairman of Service Program, Department of Physical Education, Michigan State University, Ann Arbor, Michigan, July 13, 1963.
Conventional movies in subject matter relating to health and to sports activities are available for use with the core program. A relatively new innovation in moving pictures is a continuous loop film. Specific skills, such as the serve in tennis, are filmed in this manner to permit a detailed analysis of techniques as performed by experts. Loop films may be packaged in a cartridge form for use with special projectors. This protects the loop from damage and simplifies the operation of the projector to the extent that students may operate the machine with a minimum of instruction.

Teaching machines are yet another device that may be used to increase learning. Skinner\(^{163}\) discusses several experimental studies that appear to demonstrate the validity of this method for reinforcing learning. In his programmed instruction textbook, Penman\(^{164}\) illustrates the suitability of much of the physical education knowledge content for learning organized in this manner. Eval\(^{165}\) suggests that it is conceivable that a student could even learn certain skill techniques, such as the tennis grip, from a teaching machine—particularly if instruction were accompanied by

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\(^{164}\)Penman, *loc. cit.*

illustrations. A significant advantage for the use of programmed instruction, in addition to its proven effectiveness, is the fact that knowledge may be sought and learning achieved on an individualized basis.

The writer has stated, as a guiding principle, that teaching methods should provide for the use of devices that will increase student perception. In keeping with this belief it is proposed that the core program should make optimum and appropriate use of all audio-visual aids, including: textbooks, handbooks, charts, models, slides, recordings, films, television, and teaching machines.

A second proposal is made that an audio-visual self-study center be established for physical education. The germ for this suggestion has been provided by others. Trumpp\textsuperscript{166} proposes individual study as a needed avenue for learning in the space age. Davis\textsuperscript{167} looks into the future and also sees the increasing need for students to learn to teach themselves. He further predicts that libraries will keep film for student review. Administratively the center may be a branch of the library service or operated out of the physical education department. The center would contain cataloged tape recordings of lectures and accompanying slides, movies, strip film and accompanying records, loop

\textsuperscript{166}Trumpp, \textit{loc. cit.}, p. 29.

\textsuperscript{167}Paul H. Davis, \textit{loc. cit.}
film, and programmed instruction topics for use with teaching machines. Students would be assisted by the attending librarian in the use of appropriate audio-visual machines, most of which are relatively simple to operate.

Three purposes may be achieved by the use of an audio-visual self-study center. First, a reference source is provided to enable instructors to make advanced assignments relating to activity skills. For example: if the tennis serve is to be taught in the next class, students may prepare themselves by viewing the appropriate loop film. The results would be a saving in class time, and opportunity for a protracted analysis of the skill. Second, the opportunities for independent study permit students to teach themselves. Audio-visual exploration in bowling, golf, tennis, and others may provide motivation for increased participation. The student may also elect the use of a teaching machine to enrich understanding of an assignment. Where lectures are recorded, students may have access to information that was given when they were absent from class. The third purpose is achieved as each student becomes aware of the extent to which he can become increasingly self directive and capable of informing himself throughout life. This goal could have educational significance far beyond the influence of any single class.

Teachers in the core program could focus attention upon the services and uses of the audio-visual self-study
center by making periodic assignments of reports or projects requiring the use of various self teaching aids.

Evaluation

Measurement and evaluation are a vital part of physical education. While the two terms are sometimes used interchangeably, their meanings are different. Measurement is considered to be a process of making comparisons and relating them to personal needs in an effort to find out where one is headed.

Student self-appraisal tests that have been proposed for use with this orientation course are therefore basically classified as measurement devices. On the other hand, evaluation is considered to be a process of judging the effectiveness of the educational experience. Measurement is a needed preliminary to evaluation for in this manner facts are disclosed which facilitate valid judgments.

The purposes of evaluation in physical education are broadly concerned with both the student and the program. Evaluation may therefore be described as having the following functions: (1) to aid the student in determining progress made in subject matter and skills, (2) to serve as a motivating agent for the student, (3) to serve as a device for allocating marks at the completion of a course, (4) to aid the instructor in estimating the effectiveness of his

teaching, and (5) to aid the department in estimating the effectiveness of the course. Within the context of this study the writer will consider evaluation processes necessary for allocating marks at the completion of the basic course, and for judging the overall effectiveness of the core.

Whenever a choice among alternatives is large, it is desirable to select guiding principles that may be used as a basis for making value judgments. A further exploration of the factors that may influence the evaluation of student achievement shall be identified by their relevance to these principles.

**Principle number one.** The evaluative process should employ a variety of tools, both objective and subjective. Measurement and evaluation procedures require appropriate instruments. The appropriateness can be determined by: the level of validity essential to render useful results, the applications which are to be made of the results, and the administrative conditions that exist. Earlier consideration of measurement instruments identified the devices best suited to determine the status of students. Many of these same instruments may be used to evaluate student achievement. The

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170 National Conference Report, loc. cit., p. 15.
most appropriate devices appear to be:

- Standardized tests - curriculum achievement
- Teacher-made tests - curriculum achievement
- Standards - achievement according to expectancy
- Norms - achievement according to peers
- Opinionnaire - judgments according to peers
- Laboratory instruments - analysis of achievement.\(^{171}\)

Objective measures are judged best where feasible and pertinent. In general practice forty-four per cent of evaluation in physical education has been surveyed to be based upon objective measures as opposed to the thirty-three per cent use of a subjective basis.\(^{172}\) The latter appears to be most effective when used to augment objective measures.

**Principle number two.** Measurement of students should be a continuous process throughout the course. The instructor should determine the status of each individual at the beginning of the course, periodically during the course, and at the end.

A nation-wide survey shows, however, that only fifteen per cent of colleges and universities determine student status by pre-testing at the beginning of each


\(^{172}\)Cordts and Shaw, *loc. cit.*, p. 412.
term.\textsuperscript{173} Contrary to common practice, the content and implementation of the proposed orientation course seems to provide sufficient measurement opportunities for effective evaluation as indicated in principle number two. Implementation of this principle implies the possibility of using improvement as a basis for evaluating individual achievement. Kent State University accomplishes this with a formula that considers both initial and final test scores in physical fitness as a basis for student evaluation.\textsuperscript{174} There seems to be merit in this practice wherever measurement criteria are highly objective.

\textbf{Principle number three.} Students should have the opportunity to evaluate their own achievement. The hypothesis is that as students learn more of their individual status and achievements they will experience a greater self-motivation for changed behavior patterns. In actual practice only twenty-three per cent of college physical education departments provide opportunities for students to evaluate their own accomplishments.\textsuperscript{175}

The opportunity for each individual to evaluate his own achievement implies several significant factors relative to the content and administration of a course. Individuals

\begin{itemize}
  \item \textsuperscript{173}Ibid.
  \item \textsuperscript{174}Bos, \textit{loc. cit.}
  \item \textsuperscript{175}Cordts and Shaw, \textit{loc. cit.}
\end{itemize}
must be familiar with the evaluative criteria and desired outcomes. Where objective measures are used, the standards and norms should be posted well in advance of the test, students informed of how to interpret scores, and test results immediately shared with the student.

Most of the measurement devices proposed for this core have been designed to deal chiefly with objective criteria which produces data that are readily interpreted by instructor and student alike. However, the subjective measure of certain social traits is one area where students are often rated by instructors yet seldom have the opportunity to evaluate themselves. The University of Florida has made a unique attempt to correct this weakness through a rating sheet used by instructor and students alike. Each student is asked to rate himself on a five point scale three times per semester. The evaluative criteria include: attendance, improvement, participation, and attitude. A quantitative score may be achieved by simply totaling the sum of the four ratings. A sample of the criteria is as follows:

Attitude: Position or bearing as indicating action, feeling, or mood.

5 - Excellent: Student was at all times a highly desirable member of the class.

4 - Good: Student has desirable habits of group interaction.

3 - Average: Student was a desirable member of the class, but at times showed minor undesirable traits of action.
2 - Below Av.: Student could be singled out as having social traits which were undesirable.

1 - Poor: Student had traits which definitely need counselling for purposes of correction.176

After students evaluate themselves at the beginning, middle, and end of the quarter, the instructor may refer to the students' self-analysis of achievement before making his evaluation for grade purposes. The completed form then becomes a part of the personal file of each student. Use of this evaluative technique in each successive physical education course also provides valuable information for a longitudinal study of student and instructor appraisals of achievement throughout the total physical education experience.

**Principle number four.** The final evaluation of student achievement at the end of the course should be based upon progress toward all of the objectives of the course, such as skills, physical fitness, attitudes, appreciations, and knowledges. These factors should be weighted according to the emphasis given in each specific course.177 The wholeness of measurement and/or evaluation is always preferred, at a sacrifice in depth, rather than depth in fragmentation.

176Waglow, loc. cit.

177National Conference Report, loc. cit.
A review of current practice in typical basic course programs reveals a varying degree of emphasis upon student outcomes unique to each core. Los Angeles State College gives equal weight to the evaluation of knowledge and skill. 178 The program at Kent State University differs in both the number of criteria and distribution of weight factors as follows: physical fitness, 60 per cent; knowledge, 30 per cent; and participation, 10 per cent. 179 Yet another program content and emphasis may be seen at Michigan State University where the final evaluation of student achievement is based upon: class work, which includes training, class participation, and workbook, 30 per cent; mid-term, 20 per cent; and final exam, 50 per cent. 180

Physical educators generally concur that skill and knowledge achievement should be evaluated for grade purposes in all classes, however, there is some disagreement regarding the appropriateness of using physical fitness and social efficiency for this purpose. Studies show that only 24 per cent of physical education departments base grades on

178McKinney, loc. cit.
179Bos, loc. cit.
180Friedrich, loc. cit.
physical fitness, and 22 per cent consider social efficiency.\textsuperscript{181, 182} If physical education is truly concerned with the total development of man, and if valid measurement devices are available for this purpose, then the final grade in each course should consider these factors. Principle number four is an expression of the writer's belief that physical fitness and social efficiency, as well as knowledge and skill, should be factors for student grade determination in the basic course and all succeeding activity classes.

The purposes of measurement and evaluation have thus far been concerned with a rating of student achievement. This represents a measure of the end product of the educative process in physical education. A second purpose for measurement and evaluation is concerned with the means used to educate students. When the means, rather than the ends, of the educative processes are evaluated, the central focus shifts from student achievements to a concern for the effectiveness of course content and teaching method. Ongoing evaluations of this type are a condition for recognizing the changing needs of students, enriching content, and improving the effectiveness of teaching. Principles may also be stated


\textsuperscript{182}Oxendine, loc. cit.
as a guide for evaluating the effectiveness of the proposed core program.

**Principle number five.** The evaluation of a course should be in terms of the objectives set up for the course. No single criterium is suitable for evaluating all orientation course core programs. Numerous examples have been cited to illustrate the variety of course objectives and differences in emphasis. Each department must therefore ask itself, "How well is this course achieving its goals?" This question, when applied to the objective proposed thus far, will dictate the need for measurement in the areas of: general orientation to the total program, self-appraisal, physical conditioning, orientation to sports, interpretative knowledge, and guidance.

**Principle number six.** Each person participating in a course should participate in its evaluation. Student judgment of himself, other students, the teacher, and the course is a necessary part of the total experience. In the final analysis, when a course or program is designed to meet the immediate and future needs of individuals, only they can evaluate properly the success or failure of this venture.

A study of general practice in physical education shows that only twenty-three per cent of departments offer students a chance to evaluate teaching effectiveness and

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course content. A review of related literature and correspondence returns have produced very little evidence of student evaluations relating to core patterns in physical education. If this is truly indicative of the amount of evaluative research being done in core, then a pressing need is apparent.

The best measures for evaluating the effectiveness of a course are found centered around what individuals think and what they do. The opinionnaire is an easily administered measurement device that may be used by students to record their evaluation of the course content, teacher, methods, and materials. Even more important than what people think is what they do. Good intentions do not always result in action. If the basic purpose of a core is to motivate students for a more enlightened selection of elective courses as well as increased activity participation, then certain measurements are called for to determine the extent this purpose is achieved. Since most colleges and universities have a physical education requirement for all students it is possible to make a comparison study between matched groups. One group may be unrestricted by any core requirements, and the other group required to take the core pattern. The effectiveness of the core program may then be revealed by the degree to which members of each group choose elective courses

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184Cordts and Shaw, loc. cit., p. 413.
appropriate to their established individual needs. A second comparative indication of what students do may be recorded in the number of activity courses each group elects beyond the general department requirement.

Follow up studies with alumni, using the questionnaire method, may be especially helpful in determining their current activity practices and needs. Measurement of these factors will not only facilitate an evaluation of the core program but also serve to indicate needed changes.

Recommendations. In the light of a recognized need for measurement and evaluation relating to both student achievement and program effectiveness, the following recommendations are made.

1. The criteria and weight factors appropriate for grading students in the orientation course should consider knowledge outcomes, 50 per cent; activity skill outcomes, 10 per cent; physical conditioning outcomes, 25 per cent; and social outcomes, 15 per cent.

2. Student ratings in specific activities of the area requirement phase of core should be made in accordance with general departmental policy which designates equal weight (25 per cent) to each of the four evaluative criteria above.

3. The effectiveness of core should be regularly evaluated in the light of program objectives, and by
instruments calling for student opinions, statistical analysis of student activity participation, and alumni questionnaires.
CHAPTER IV

CONCLUSION

Summary

Physical education in the space age is undergoing a revolution brought about by explosive increases in knowledge and college enrollments. Scientific information directly related to activity participation and health is accumulating at rates that challenge education to keep pace. Student enrollments are snowballing by degrees that exceed the capacity of traditional administrative and teaching practices to accommodate. The dynamic nature of our culture is reflected in the changing status and needs of students. As the pressures of growth increase so too does the need for change. In the light of these pressures, physical education departments are impelled to examine anew their relationship to the goals of general education. New emphasis in curricula, methodology, and intensity of programs are required to fulfill the potentials for individual development.

This study is concerned with the development of a core program that will identify the common needs of students in the changing culture of our day. The content of common learnings has been designed to give form and substance to
what constitutes a physically educated college man. A further concern is the development of a plan for implementing the program through appropriate scheduling, and teaching methods that might best improve the effectiveness of teaching and provide solutions to problems posed by increasing enrollments.

There are various reasons for the acceptance and for the installation of the core program. The core program departs from the usual curricular pattern in that it provides a center around which other curricular experiences in physical education revolve; it becomes the basis for subject matter to be selected, skills developed, and understandings acquired. The core calls for the exploration of a wide range of relationships. Meaningful experiences rather than a definite body of subject matter are viewed as the most likely way to influence behavior. An individualized approach to teaching content and techniques are utilized in a core.

The core program of this study concerns itself with two basic areas of organization. First, in the general education pattern, it identifies and proposes content to develop common learnings needed by all students. The second area of organization is centered around the development of special knowledge and skill based upon the recognition of individual differences in interests, attitudes, and capacities.
After careful evaluation of the alternatives for content and implementation, the emerging core program features the combination of an orientation course, and area requirement. The objectives of the core program include:

1. To acquaint all students with information regarding the opportunities in physical education, its policies, procedures, facilities, program, and staff.

2. To assist students in the development of a realistic self-image in order that each may recognize his needs and potential in physical fitness, neuromuscular skills, social and emotional efficiency, and interpretive knowledge.

3. To present progressive training techniques that may be used to improve and maintain a level of fitness, and to offer an experience in physical change.

4. To provide basic skills associated with personal safety and survival.

5. To orient students to a wide range of recreational sports with carry-over value consistent with present and future needs.

6. To develop knowledge and understanding of a quality and quantity sufficient to interpret individual needs and to relate this information to present and future activity skills participation.

7. To acquaint students with the prominent role which competition and sports play in our culture.
8. To provide individual counseling and guidance based upon many kinds of personal data and designed to assist the student with a wise selection of activities consistent with his needs and interests.

The two areas of this core program each serve several phases of common developmental need. These may be broken down in outline form as follows:

<table>
<thead>
<tr>
<th>Phases of the Orientation Course</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>What ___________________________</td>
<td>Orientation to physical education.</td>
</tr>
<tr>
<td>Who ___________________________</td>
<td>All incoming freshmen.</td>
</tr>
<tr>
<td>Why ___________________________</td>
<td>To better understand the &quot;why&quot; and &quot;how&quot; of physical activity in modern living.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How</th>
<th>Phases of the Course</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Orientation</td>
<td>To give overall direction.</td>
<td></td>
</tr>
<tr>
<td>Self Appraisal</td>
<td>To determine individual status and potential.</td>
<td></td>
</tr>
<tr>
<td>Conditioning</td>
<td>To enable each individual to experience and understand physical change.</td>
<td></td>
</tr>
<tr>
<td>Orientation to activities</td>
<td>To become acquainted with various activities.</td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td>To understand the why of physical education.</td>
<td></td>
</tr>
<tr>
<td>Guidance</td>
<td>To aid in activity selection.</td>
<td></td>
</tr>
</tbody>
</table>
Phases of Area Requirements

What __________________________ Area requirements for physical education.

Who __________________________ 1. All students--first three activity choices.¹
                                         2. Students deficient in physical fitness or swimming proficiency.²

Why __________________________ 1. To acquire useful skills and knowledge in activities serving the breadth of common needs.³
                                         2. To acquire useful skills and knowledge in activities serving special individual needs.⁴

How

<table>
<thead>
<tr>
<th>Phases of the area Requirement</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic skills ___________________________________</td>
<td>To increase personal survival skills and recreational interests around water.</td>
</tr>
<tr>
<td>Developmental skills _____________</td>
<td>To encourage each student to seek improved organic vigor through vigorous activity participation.</td>
</tr>
<tr>
<td>Recreational skills _____________________________</td>
<td>To motivate the auestion of skills and knowledge in at least one activity with high recreational carry-over value.</td>
</tr>
</tbody>
</table>

¹Applicable to physical education departments with a two-year requirement.

²Applicable to physical education departments with a one-year requirement.

³Two-year requirement.

⁴One-year requirement
In order to summarize more effectively the overall pattern of the core program each of the various phases will be described in more detail in the pages to follow.

General orientation. An attempt is made at the onset of the orientation course to acquaint each student with the scope of his educational opportunities related to physical education. Information is provided for the purpose of motivating future participation in the intramural sport, intercollegiate athletic, health education, and professional preparation programs of physical education. An introduction to the service or required program is provided to include general objectives of physical education, facilities, nature of the program, class organization, and policy. The method of teaching calls for the use of a movie to provide an overview to the program, a student handbook to supply the particulars, and opportunities for students to ask questions.

Self-appraisal. Early in the course tests are given to students to determine the following informational factors relating to organic fitness: height, weight, grip strength, pull-ups, sit-ups, standing broad jump, 50-yard dash, and a 600-yard run-walk or three minute step test. The student's basic body type or somatotype is determined in an attempt to more adequately add to his realistic self-image and also to aid in future guidance procedures. Posture pictures are taken and a posture analysis is made for the purpose of
determining body misalignments that may be correctable. Additional self-appraisal tests are also given in order to determine status and need in the areas of activity skills background, emotional stability, social efficiency, sports knowledge in eight selected activities, and general physical education knowledge. Specific measurement devices have been selected with an eye to their validity, suitability for student self-use, and time requirements. The raw scores of the tests are converted to percentile scores and then plotted on a composite profile sheet provided for this purpose. Students are thereby enabled to compare themselves in profile with the rest of the freshmen students.

Conditioning. Throughout the term each student never has less than eleven minutes of vigorous activity every class period. The means necessary to provide vigorous activity depends upon the nature of the activity itself. Participation in developmental sports like wrestling, handball, tumbling, and swimming assures vigorous activity throughout the class period. Organic development is achieved simply by keeping the intensity of participation high. Recreational sports such as golf, bowling, social dance, and archery do not inherently provide the same opportunities for vigorous activity. Therefore, during the five week period when these activities are taught, the last eleven minutes of each class are devoted to participation in a vigorous
exercise program known as the 5BX Plan. The five exercises of this plan (toe toucher, sit-up, flutter kick, push-up, and stationary run) are a balanced set covering the major muscle groups of the body and including such organic fitness components as flexibility, strength, and cardiorespiratory endurance. Participation in the 5BX Plan is designed to serve three major purposes: (1) to supplement less vigorous activity classes with developmental exercises, (2) to teach an exercise plan that will enable each student to advance to his own predetermined level of fitness without expensive equipment or unnecessary discomfort, and (3) to help each student acquire the habit of exercising regularly. The objective of enabling each student to experience physical change is therefore implemented through a planned participation in certain vigorous sport activities and progressive training techniques inherent in the 5BX Plan.

Orientation to activities. Common learning experiences for each student in the orientation course include introductory and exploratory experience in three areas which are broadly classified as (1) developmental activities, (2) aquatic skills, and (3) recreational skills. Eight activities have been designated under these headings for a minimum of two class periods of student participation in each. The specific activities include: wrestling, tumbling, handball, swimming, tennis, golf, archery, and social dance
or bowling. Students are presented with fundamental information which is followed by opportunity to actually try out each of these activities. During their participation in the sports the instructor observes and classifies each student for future guidance purposes. Team sports are excluded from the list of exploratory activities on the assumption that the high school physical education background adequately serves this need. Selection of these particular activities was influenced by the following factors: (1) recommendations of the National Conference Report, (2) student preference as indicated in surveys, (3) potential for orientation to the range of facilities, and (4) a balance between activities suited to meet the immediate needs for vigorous activity, and those necessary to introduce activities with high carry-over value. A fourth general classification is concerned with certain preventive skills which characterize the physically educated college man. Each student is expected to have a degree of competency in correct body mechanics, progressive relaxation, and first aid skills including artificial respiration and bleeding control techniques.

**Interpretation.** Throughout the program, a regular attempt is made to present interpretive materials to the student. The scope of interpretative knowledge draws freely from the other areas of the course, specifically: self-appraisal, conditioning, and orientation to sports. Related
topics include: the role of exercise in modern living; personal appearance involving posture, weight control, and body type; physiology of exercise with facts and fallacies about exercise, physiological changes with the conditioned state, fatigue and recovery; safety and survival which covers body mechanics, stress and emotional tension, and first aid; principles of motor learning; principles of training; and sports in the American culture. Each topic heading is considered not only in light of the need for interpreting movement outcomes but also with a thought to the potential for motivating changes in attitudinal and experience patterns. The basic purpose of interpretive knowledge is participation with understanding. The traditionally compartmentalized gap between physical education and health education is bridged with the inclusion of weight control, certain aspects of emotional health, first aid, and fatigue topics. Interpretive knowledges are also seen to enrich the course content by making available to students the latest scientific facts related to activity and health. Closed circuit television and/or strip film, tape recordings, movies, models, and charts are featured teaching devices for enriched learning. The use of textbook homework assignments, and assigned readings are techniques designed to increase student understanding, as well as his participation in self-directed learning.
Guidance. The final days of the course are spent in guiding students and aiding them in guiding themselves into those activities that will be of most benefit to them both now and in the future. Recorded results of self-appraisal tests relating to individual need in the areas of organic fitness, social and emotional efficiency, and activity skills, are considered along with the body type of the student, his own activity interests, the future job and job location of the student, and the instructor's estimate, in providing personalized guidance. The role of guidance in the core program is characterized by several basic principles that assure (1) progressively increasing degrees of free student choice in elective activities, (2) guidance techniques centered around individual student-teacher contacts, and (3) the widest possible spread in the total activity experiences.

The orientation course phase of the total core program is supplemented by certain area requirements concerned with both the common and special needs of students. Upon completion of the orientation course students are required to elect one activity of their choice from each of three areas, namely: aquatic activities, developmental activities, and recreational activities. All students are therefore required to develop new skills and acquire participation outcomes in these broad areas of common need. Students with special need for improved organic fitness and/or basic
swimming skills are assured attention to their individual needs. Physical education departments with a one-year general education program may apply the area requirement to only those students who are unfit or nonswimmers, on the basis of tests given in the orientation course.

Evidence of the provision for progressive steps toward student self-direction may be seen in the overall core pattern. At the onset of their physical education experience, all students are required to take the orientation course which provides common learning experiences in response to recognized needs of students as a group. Both the common and special needs of individuals are further recognized with guided electives in three broad areas. Finally, the remaining activity choices become unrestricted and are based upon individually recognized needs and interests.

Much thought and consideration have been given to the manner of implementing the core program. Preferences in the selection favored the useable and practical rather than the visionary and theoretical.

Conclusions

The writer concludes:

1. That the class structure in the orientation course be distinguished by the use of two-hour blocks of time, preferably two each week.
2. That coeducational instruction is both desirable and administratively feasible in the core program.

3. That simultaneous scheduling of classes provides for flexibility in group size which permits more effective use of facilities and staff.

4. That team teaching is an effective way of improving the quality of instruction in the orientation course.

5. That the inclusion of atypical students in the orientation course is desirable and feasible.

6. That the use of a wide range of audio-visual aids, including a departmental student handbook and class textbook, will enrich learning experiences in core.

7. That an audio-visual self-study center provides needed opportunities for greater use of independent study in physical education.

8. That systematic evaluation of student achievement and program effectiveness is a prerequisite to effective learning in the core program.

Recommendations

The writer suggests:

1. That there be experimentation with the basic tenents of this study in a functional core situation.

2. That a student handbook be developed to orient students to the unique nature of local physical education curricula.
3. That there be experimentation with the effectiveness of scheduling practices that permit large block of time, flexible class size, and team teaching techniques in the core program.

4. That a study be made to determine the comparative success of this core program in motivating changed attitudes and activity patterns of students.

5. That a combined text and workbook be developed to accompany the specific objectives of the orientation course.

6. That there be experimentation with methods of implementing coeducational instruction in this core program.

7. That a study be made to expand possibilities in the orientation course for increased integration and participation by atypical students.

8. That the concepts derived by the study be explored for possible guidance to the physical educator in expanding his vision of the area of physical education and the core structure.

Even so brief a study has deepened the author's insight and appreciation of the implications of the inspirational statement with which Oberteuffer closes his book, *Physical Education*

Physical education taught in schools must answer many demands—of nature, of social need, of the culture of the time and place. The logic of these relationships is clear: If the democratic way of life is to be preserved,
then
Physical education programs must in every conceivable way instruct in democratic behaviors and demonstrate democratic procedures.
If the individual in the democracy is to attain his fullest development,
then
From all of the world of science physical education must borrow and apply knowledge about the human organism, the way it develops, the hazards of its existence, and the conditions under which it thrives.
If this development is to be effected through the means of organized education,
then
Physical education must plan, conceive, and execute its program in step with the best purposes and procedures of education and have no objectives different from those acceptable to education in a democracy.

The development of any curriculum, therefore, or the solution of any problem, the instruction in any class, or the dealing with any student will be worked out within the above boundaries, and any deviation from the above charted course will be recognized at once as faulty practice.5

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