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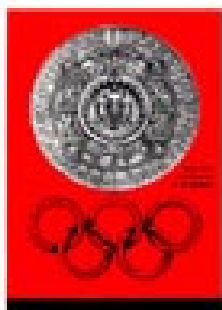
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Physical Education

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PHYSICAL EDUCATION

An Academic Discipline

FRANKLIN M. HENRY

COLLEGE PHYSICAL EDUCATION in America owes much of its genesis to the concept that exercise and sports are therapeutic and prophylactic. In fact many directors of physical education of the preceding generation were medical doctors. The school program probably received its greatest impetus as an effort to reduce draft rejects and improve the fitness of youth for military service in World War I. This objective was of course re-emphasized in World War II. It is understandable that our professional concern has tended to center on what physical education can do for people rather than the development of a field of knowledge.

Since most of the present senior generation of physical educators received their doctorates in education, it is understandable that their orientation has been toward the profession of education rather than the development of a subject field of knowledge. In fact physical education has the doubtful distinction of being a school subject for which colleges prepare teachers but do not recognize as a subject field, since the typical physical education department is unique in being under the jurisdiction of or closely

related to the school or department of education. Some schools or colleges of physical education do exist in large universities and are patterned after the schools or colleges of education.

When a young person planning a high school teaching career begins his college or university degree work with a major in, for example, chemistry, he starts out with freshman chemistry, which has as a prerequisite a course in high school chemistry. He then takes other lower division chemistry courses, to which the first course is prerequisite. In his junior and senior years, he completes an upper division major in chemistry, in order to qualify for the bachelor's degree. This major consists entirely of course content far more advanced than anything he will teach in a high school. Similarly, the student who majors in mathematics must have an upper division major in advanced mathematics, and even his most elementary freshman course in mathematics will be at an advanced level in comparison with the usual high school mathematics courses. In marked contrast, the student who obtains a bachelor's degree in physical education typically has a major that is evaluated and oriented with respect to what he is to teach in the secondary schools, and how he is to do the teaching or how he is to administer the program. Many physical education major programs, for example, do not even require a course in exercise physiology.

Actually, it is both possible and practical to offer a degree with an academic major in the subject field of physical education, and several universities have such a degree. If the person obtaining this degree plans to teach in the schools, he supplements the academic major with the necessary courses in methods and other professional topics. Academic vs. professional is not an issue of having either the one or the other, since the two are not mutually exclusive. However, the present discussion is not concerned with the merits of one or the other or the nature of the best combination. Rather, it is concerned with defining, at least in a general way, the field of knowledge that constitutes the academic discipline of physical education in the college degree program.

AN ACADEMIC discipline is an organized body of knowledge collectively embraced in a formal course of learning. The acquisition of such knowledge is assumed to be an adequate and worthy objective as such, without any demonstration or requirement of practical application. The content is theoretical and scholarly as distinguished from technical and professional. (This statement is a synthesis of the appropriate definitions found in several lexicons and is probably acceptable to most college faculties.)

There is indeed a scholarly field of knowledge basic to physical education. It is constituted of certain portions of such diverse fields as anatomy, physics and physiology, cultural anthropology, history and sociology, as well as psychology. The focus of attention is on the study of man as an individual, engaging in the motor performances required by his daily life and in other motor performances yielding aesthetic values or serving as expressions of his physical and competitive nature, accepting challenges of his capability in pitting himself against a hostile environment and participating in the leisure time activities that have become of increasing importance in our culture. However, a person could be by ordinary standards well educated in the traditional fields listed above, and yet be quite ignorant with respect to comprehensive and integrated knowledge of the motor behavior and capabilities of man. The areas within these fields that are vital to physical education receive haphazard and

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peripheral treatment, rather than systematic development, since the focus of attention is directed elsewhere.

THUS, THE ACADEMIC discipline under consideration cannot be synthesized by a curriculum composed of carefully selected courses from departments listed under A, H, and P and S in a university catalog. True, the student who would master the field of knowledge must first be grounded in general courses in anatomy, physiology, physics and certain of the behavioral and social sciences. But upper division courses need to be specialized, or else the development of the subject field will be haphazard, incomplete, and ineffective. Twenty-four semester units, in fact, may well be insufficient to cover adequately the available body of knowledge. The areas to be covered include kinesiology and body mechanics; the physiology of exercise, training and environment; neuromotor coordination, the kinesthetic senses, motor learning and transfer; emotional and personality factors in physical performance; and the relation of all of these to human development, the functional status of the individual, and his ability to engage in motor activity. They also include the role of athletics, dance, and other physical activities in the culture (both historic and contemporary) and in primitive as well as "advanced" societies. Consideration of the relation of these activities to the emotional and physical health and aesthetic development of the individual constitutes an application of the field of knowledge, but may well be presented and integrated with it, provided that priority is given to the basic knowledge rather than its application to health.

This field of study, considered as an academic discipline, does not consist of the application of the disciplines of anthropology, physiology, psychology and the like to the study of physical activity. On the contrary, it has to do with the study, as a discipline, of certain aspects of anatomy, anthropology, physiology, psychology, and other appropriate fields. The student who majors in this cross-disciplinary field of knowledge will not be a physiologist or a psychologist or an anthropologist, since there has necessarily been a restriction in breadth of study within each of the traditional fields. Moreover, the emphasis must fre-

quently be placed on special areas within each of these fields—areas that receive little attention in the existing courses. Any one of these disciplines encompasses far more material than can be included in the usual course of study for a major in the subject.

This is comparable to the situation in a number of the disciplines. A biochemist, for example, is necessarily deficient in his breadth of training as a chemist, and he is also necessarily narrow as a biologist. Nevertheless, he is a more competent biochemist than is a chemist or a biologist.

SPECIAL HAZARDS and special responsibilities attach to the introduction of any new field of study. In a major that is made up of courses in a cross-disciplinary department, there is a danger that normal academic standards of depth may be relaxed. For example, an upper division course in exercise physiology will not be respected, and in fact will not ordinarily be authorized in a college of exceptionally high standards, unless a thorough elementary course in human or mammalian physiology is required as a prerequisite. This reasoning holds for all upper division courses in any major that is accepted as a discipline in such a college.

Problems certainly occur in delimiting the field of knowledge outlined above. The development of personal skill in motor performance is without question a worthy objective in itself. But it should not be confused with the academic field of knowledge. Similarly, technical competence in measuring a chemical reaction, or computational skill in mathematics, are not components of the corresponding fields of knowledge. Learning the rules and strategy of sports may well be intellectual, but it is highly doubtful if a course on rules and strategy can be justified as a major component of an academic field of knowledge at the upper division college or university level.

One may well raise such a question as where is the borderline between a field such as physiology and the field of physical education? No simple definitive statement is possible, but it is not difficult to show examples that illustrate the region of demarcation. The existence of oxygen debt is physiology; the role of oxygen debt in various physical performances is physical education. We do not know why a

muscle becomes stronger when it is exercised repeatedly. The ferreting out of the causal mechanism of this phenomenon can be considered a problem in physiology, although the explanation, when available, will be appropriate for inclusion in a physical education course. On the other hand, the derivation of laws governing the quantitative relation between an increase in strength and the amount, duration, and frequency of muscle forces exerted in training is surely more physical education than physiology. Determination of the intimate biochemical changes in a muscle during fatigue would seem to be a problem in physiology, although of direct interest to physical education. Here again, the quantification of relationships and the theoretical explanation of their pattern as observed in the intact human organism is more physical education than physiology. This is not mere application—it only becomes application when such laws are related to practical problems. The physiology of athletic training is not really application of physiology—rather it *is* physiology, of the sort that is part of the academic discipline of physical education, and only becomes applied when it is actually applied to practical problems. Unfortunately, in this particular area, what is called "physiology of training" consists to a large extent of over-generalized and speculative attempts to apply the incomplete and fragmentary fundamental knowledge currently available. It is to be hoped that this is but a temporary situation.

The study of the heart as an organ is physiology, whereas determining the quantitative role of heart action as a limiting factor in physical performance in normal individuals is perhaps more physical education than physiology. Thus the study of variables which cause individual differences in performance in the normal range of individuals is of particular concern to physical education but evidently of little interest to physiology. (All of these examples are of course borderline by intent.)

TEXTBOOKS on exercise physiology are written for physical education courses. Much of the research they describe was done by physiologists. On the other hand, a standard textbook on physiology written for physi-

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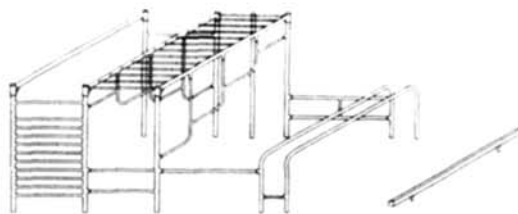
Physical Education

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ologists may not even have a chapter on exercise, and if it does, the treatment is notably incomplete. Similar examples are to be found in the field of anatomy. Textbooks on psychology have at best a sparse treatment of such topics as reaction time, the kinesthetic sense, and motor performance. These are not matters of fundamental interest to present-day psychologists, although they did occupy a position of importance in the first two decades of the present century. Even though anthropologists have long been aware of the role of physical games and sports in all cultures, one cannot find any comprehensive treatment of the topic in anthropology textbooks.

It would be unfair to say that scholars in various fields such as those mentioned above feel that it is unimportant to study man as an individual engaging in physical activity. Rather, the neglect is because this aspect is of peripheral rather than central interest to the scholar in that field. To borrow a figure of speech (not to be taken too literally), anthropology and other fields mentioned approach the study of man longitudinally, whereas physical education proposes a cross-sectional look at man as he engages in physical activity.

I suggest that there is an increasing need for the organization and study of the academic discipline herein called physical education. As each of the traditional fields of knowledge concerning man becomes more specialized, complex, and detailed, it becomes more differentiated from physical education. Physiology of the first half of the century, for example, had a major interest in the total individual as a unit, whereas present-day physiology focuses attention on the biochemistry of cells and subcellular structures. While the importance of mitochondria in exercise cannot be denied, there is still need to study and understand the aspects and implications of exercise as a whole. Furthermore, the purely motor aspects of human behavior need far more attention than they currently receive in the traditional fields of anthropology and psychology. If the academic discipline of physical education did not already exist, it would need to be invented. ■



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