Modern Psychology in Physical Education

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A THESIS PRESENTED AT
THE COLLEGE OF WILLIAM AND MARY
AS A PARTIAL REQUIREMENT FOR
THE DEGREE OF MASTER OF ARTS.

Presented by: Alberta Cary
In this study it will be the writer's purpose to trace the application of modern educational psychology to physical education, and particularly to bring out the need for the utilization of the recent findings of the objective or behaviorist school. On the basis of the available facts, certain suggestions can be made, and the writer hopes that others will carry these to a fuller development.
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MODERN PSYCHOLOGY IN PHYSICAL EDUCATION.

I.

Psychology has had such a varied career that it will probably be well to make a brief survey of its general history, before attempting to deal with the origins and subsequent development of modern educational psychology in relation to physical education. To serve this purpose I would like to quote the following, in abbreviated form, from Sandiford's *Educational Psychology*.

"Psychology as a separate branch of study is more than 2000 years old. Aristotle's treatise, 'De anima' (on the soul) is generally regarded as its foundation.

By the time the Middle Ages were reached, the mental and spiritual aspects of soul had become separate subjects of study; the philosopher (or psychologist) emphasizing the one, the theologian the other. Psychology changed then from the study of the soul to the study of the mind.

The problem of the relation between mind and body remained unsolved...Descartes (1596-1650), the second founder of psychology, boldly proclaimed that between the two there was no natural connection. Matter was extended substance or substance capable of filling space. Mind was unextended, thinking substance whose essence was consciousness...From this time psychology gradually became the study or science of consciousness.

Various meanings were given to this term, the commonest being that of awareness...Consciousness could be studied only introspectively...Later, it was observed that people did things when they were conscious, they did nothing of psychological importance when unconscious. To an observer, a person's behavior was the index of his consciousness. Why not study his behavior?.. This could be made the subject of experimental investigation and thus form the subject matter of a true science. Gradually psychology became an objective science—the study of behavior. Although there are many interpretations of behavior (all schools accepting the observable responses to stimuli as the subject matter of psychology), no psychologist would deny that the objective viewpoint is the one that dominates the subject today..."

This, in brief, is the story of psychology. Summing it up we may say with Woodworth, \(^2\) 'First psychology lost its soul, then it lost its mind, then it lost consciousness; it still has behavior of a kind \(^1\).”

II.

In reviewing the contributions of the originators of modern educational theory, no attempt will be made to discuss their philosophical predecessors and, hence, their philosophical and psychological background. Also, in such a short historical introduction, the list will be incomplete and the summaries brief. However, it will endeavor to point out their attitudes toward what was then termed “physical training.”

John Comenius, the great Bohemian educator of the 16th century, \(^2\) is often regarded as the pioneer writer on modern education. To him, the true aim of education was to develop the faculties of both mind and body; teaching was best done through the senses of seeing and hearing—through observation and experience. Another tenet, that education should be universal, made knightly sports as a means of physical development, or even recreation, ridiculous. Hence he viewed exercise as a means of obtaining and maintaining health; it served as a rest from study and ultimately furthered the learning process.

In his treatise Some Thoughts Concerning Education, John \(^3\) Locke gave as the aim of education; first, vigor of body; second, virtue of soul; third, knowledge. Locke had in mind

the training of the higher classes, largely through tutors, but he too discouraged knightly sports. His road to health and physical welfare lay through a hardening and disciplining process. He had much to say about hygiene but little about the value of play.

The theories of Rousseau, as set forth in his classic "Emile" need little repetition. In revolting against the repressions, both social and individual, of his day, he demanded for the child freedom in physical activity for proper maturation, which naturally leads into first-hand experience with the true source of knowledge, namely, the physical, natural worlds. He stressed education as the continual growth of an indivisible entity, physical, intellectual, and moral, from birth until death.

"If you would cultivate the intelligence of your pupil, cultivate the power (the body) which it is to govern".

In his opinion it was difficult to determine when an activity ceased to be of physical value and became intellectual. He resembles Locke in his ideas concerning the general hardening process, but his physical activities would be more natural, more joyous. Girls too, in order that natural growth may produce healthy mothers, should participate in games and outdoors activities.

2. Rice, E. A.: A Brief History of Physical Education, p. 87
3. Rousseau: Emile: or, Concerning Education.
Rousseau’s theories found almost immediate application in the Philanthropinum (1774) of Basedow, and the Schnepfenthal Educational Institute (1785) of Salzmaun. At the latter, GutsMuths, a teacher of physical education for fifty years, gained such an influence that he might have secured a prominent place for school gymnastics in general education, had not a period of political unrest and war interfered. This statement is significant, for similar conditions existed in so many countries of Europe, that militarism, coupled with formal discipline in general education, almost strangled the true progress of physical education.

Though not a follower of Rousseau, another German, Fredrick Ludwig Jahn (1778-1852) must be mentioned here because of his profound effect on German physical education, and indirectly on that of the United States. He began his work by encouraging school boys in gymnastic exercises and athletic sports (later called Turnen) for patriotic motives.

2. "Jahn believed that the hope of German freedom lay in the development of strong, sturdy, and fearless youths. He was aware of the great power of games and sports to break down class distinctions and generate social democracy. Exercise should be regarded as a means of growth and development rather than as a hardening process."

3. He would teach by vorturners (class leaders) with the teacher present as an advisor, and as a model for social conduct. Freedom of action, he felt, was essential to develop physical power and harmonious cooperation. Jahn's ideals spread to those past school age, and turnvereine were organized.

3. Ibid., p. 100-103.
During his life he was severely criticised by GutsMuths and other educators for the association of his program with politics, for its heaviness, difficulty, and unscientific nature, and for its lack of provision for women. Nevertheless, the Turners, though they overformalized Jahn's work, have been instrumental in keeping alive certain elements of a "natural" program of physical education— one that placed value on recreation, music, and social and moral training.

Many authorities consider that Pestalozzi, in the early 19th century, laid the foundations of modern pedagogy by attempting to "psychologize" education. This effort necessitated a study of the child through actual contact and especially a study of the child mind. He concluded that education should assist in the harmonious unfolding of the mental, moral, and physical power of the child. The child's part in education was observation, sense perception, and self-activity; the teacher's part was intelligent and sympathetic direction. The strength, skill, endurance, and command of the body in general, derived from physical exercise warranted giving physical education an important place in general education. But the two should not be separated, either in aims or methods, for the child is a unity. The physical and mental faculties alternately develop each other.

"Education Through Play" is the significant phrase sometimes used to epitomize the philosophy of Fredrick Froehel (1782-1852). His major tenet was that education is most efficiently acquired through activity, self-expression, and social participation.

Froebel approved Rousseau's idea of education through motor expression, though in practice he tended to make it hardly less formal than the Pestalozzians were making objective teaching. Yet the principle was defined for all time, that of learning through self-activity, self-originated and self-directed.

As a result of his demand for the inculcation of cooperation through social participation, we find a method of work much like the psychologically approved project method of today.

2. "With Froebel, modern project psychology shifts the center of gravity from the teacher to the individual pupils; more precisely, to the minds and energies of the members of the school-room group".

His ideas and methods have been elaborated and accepted by the educational world and many of our modern educational activities—motivation, socialized recitation, project method, socializing the curriculum, and standardized grouping—are outgrowths of a fundamental belief in socialized activity. The principles of his kindergartens were eventually to have a beneficial influence on the upper grades, especially in regard to physical activities. He pointed the way definitely to the educational values of play, and his teachings are largely responsible for the widespread adoption of the play movement.

III.

In spite of the emphasis given by these great pioneers to some of the very methods and activities which present leaders deem most valuable, physical education in America failed at first to follow their lead. A few kindergartens were established in the United States between 1850 and 1875. Training schools for

1. Peckstein, L. A. & Jenkins, F.; loc. cit., p.31
2. Ibid; p.32
3. Ibid; p.35.
4. Rice, E. A.; loc. cit., p.98
teachers were founded, and the normal training movement received marked impetus. From 1875 to 1900 the kindergarten became common, although its principles were not applied to elementary and high schools.

"Physical training" was suffering, with other subjects of the curriculum, under the tyranny of formal discipline.

1. "In Europe when school authorities began to think of physical education in a society controlled by military discipline and in a school organization dominated by formal discipline, they naturally thought of gymnastic drills. This idea took root in America."

The principal drill systems advocated in the United States were the Swedish and the German. A friendly rivalry existed between the advocates of the two systems, each faction urging the acceptance of its own program in the public schools.

2. "The Germans held that the Swedish method was too formal, uninteresting, failed to obtain recreational values, and was very weak in social and moral training. The Swedish supporters claimed that the German system lacked scientific foundation, that too much music and rhythm accompanied the exercises and thereby prevented the maximum physical benefit from being derived, that too much emphasis was given to the recreational and not enough to the educational results, and that the system was unable to cope with the problems of individual and specific weakness."

The enormous growth of the factory system, with the consequent urbanization of life, made the need for some program of physical education in the schools imperative. Hence a "Conference in the Interest of Physical Training" was held in Boston in 1889. It was a meeting of leading educators, as well as of experts in physical training, all of them intent upon formulating a program that would be "corrective". In addition, the schoolmen proposed that any

physical training that was to be taken into the school should require very little time, should be inexpensive and not demand especially trained teachers, should conduct its activities in the classroom, and should not require apparatus. Unfortunately, the specialists in physical training were able to meet these requirements; they presented a system of gymnastic drills. The fact that this program did not adequately meet developmental needs, was not truly "corrective", was lacking in educational values, and was foreign to the traits and characteristics of American boys and girls, escaped the notice of the Conference. This type of exercise could not appeal to youth; hence, from grammar school through college, teams were organized for the playing of games, and

"the institutions represented soon found themselves involved in disputes, financial arrangements, and real embarrassments."

These activities were viewed askance, their educational possibilities unappreciated; however, they were usually allowed to continue because of their advertising value. Naturally, the leadership was often poor and the goals set up were commercial rather than educational. In many instances school athletics still suffer from these scars of early organization.

IV.

The drill school has been severely denounced by such modern authorities as Jesse F. Williams, Clark W. Hetherington, and many others. However strong the influence of such leaders the tearing
down of an old system and the building up a new could not come as a result of the efforts of a few. Hetherington lists the movements that have helped evolve a truly American scheme as follows: The playground movement, the "health through exercise" movement, the athletic movement, the educational recreational movements (Boy Scouts, Girl Scouts, etc.), the school health movement, and the interest in physical welfare stimulated by the revelations of the war-draft examinations. These movements and others have resulted in two things: a changed public opinion and a new technique. The public began to appreciate the need for physical education in the school curriculum. The physical educators in response to new demands formulated a different list of activities; these may be grouped as follows:

1. I. Natural or Playful Activities,
   1. Self-testing activities and Stunts.
   2. Dramatic Activities.
   3. Rhythmical Activities and Dancing.
   4. Hunting Plays and Games.
   5. Athletic Contests.
   6. Personal Combative Activities.
   7. Water Activities.
   8. Winter Activities.

II. Related Activities.
   9. Locomotor or Place Adjustments.
   10. Outing Activities.
   11. Industrial Activities.

III. Formalized Activities.
   12. Marching.
   13. Postural Instruction.
   14. Gymnastic Drills (developmental)
   15. Special Corrective Movements.

To Hetherington the objectives of such a program would be;

2. "I. Immediate objectives: the organization and leadership of child life as expressed in big-muscle activities.
   II. Remote objectives; adult social adjustment or efficiency.
   III. Developmental objectives:

2. Hetherington, C.W. :loc.cit, p.20 and p.57
The development of the instinct mechanisms.
2. The development of the intellectual mechanisms.
3. The development of the neuro-muscular mechanisms and nervous power.
4. The development of organic power.

IV. Objectives in social standards.
V. Objectives in the control of health conditions.

"The needs of children in big-muscle activities are for development; the needs of adults are to keep fit."

Williams treats the sociological background of the new program somewhat differently in a stimulating chapter on "The Place of Physical Education in American Life". He says that modern industrial work too often fails to offer a chance for self-expression and self-realization. The laborer works to earn money in the hope that he can buy happiness in his leisure hours. If he does possess the leisure, he is often untrained for its use. Consequently, he seeks professional and commercialized forms of recreation, which do not re-create because he so often remains a mere spectator.

2. "Active recreation may range all the way from the minor arts to the major ones, but if there be any saving grace in any of them it will come through the opportunity for the individual to lose himself in the world of activity that he pursues. This may be in the dance, in painting, in camping, in writing, in a hundred activities carried on, not for any economic returns, but for the mere love of the thing."

On one hand, the school needs to foster such a program of physical activities that the child will acquire sufficient skill in forms of recreation useful for later life, and also, one that provides opportunity for adult recreation, thus blending the school and community programs. Children need, for the full development of organic and nervous power, from two to five hours (according to age) of big-muscle activity a day. This can only

be gained by teaching activities in school that have an interest strong enough to cause their continuance in free hours. The natural pastimes of children meet these demands, and have in addition, as will be discussed, definite moral and social values that are not present in formal drills.

V.

While formal material is easily rejected because of its obvious inability to secure full development, formal method is often justified for its supposed disciplinary values. To Williams, Dewey and certain others it is a conflict between the theories of interest and effort. Interest claims an identity between the participant and the activity— the sole guarantee of unified response. It insures the desired continuance of activities, increases the rate of learning, promotes true effort, facilitates the achievement of the hygienic effects of exercise, and even aids in therapeutic treatments. Also, this theory claims that the application of the theory of effort results in the rebellion of many individuals to authority of any kind or else produces dull and spineless creatures. Effort claims that the appeal to interest develops a weak, vacillating character, while a program of military discipline develops obedience.

1. "Moreover, the inhibition necessary in response-command exercises not only inhibits unnecessary movements, but trains the individual to inhibit unworthy and socially harmful impulses."

This theory may be traced to the militarism of the 19th century Europe which in turn rested upon a belief in formal discipline far more ancient in origin.

To settle this controversy, Williams turns to psychology, principally to that of Thorndike and of his expositor, Gates.

The following is a summary of his statements:

1. "There are instinctive responses to bodily and organic conditions...to the presence and activities of other human beings...to objects and events in the environment...It is interest in activity that has had man from earliest times to do certain things that gave satisfaction, and consequently has resulted during the process of evolution in the readiness of certain neurons in the nervous system to be satisfied with certain responses and to be annoyed with others...The instinctive responses to the environment include such racial motor activities as running, jumping, throwing, climbing, carrying, lifting, and hanging...Hence for physical education, there exist in the nervous system sets of activities already organized and ready to act; when utilized a feeling of satisfaction results...As for inhibition, it actually prepares the body for movement, and as a character quality, is produced not by formal gymnastics, but by giving the individual knowledge of how to act and developing in him an attitude that favors acting in such a fashion."

One cannot discuss the relation of original nature to physical education without entering at once the field of prime concern to the exponents of the natural school, i.e., character development. Hetherington states that

2. "the values of physical education in character training bulk large, because natural big-muscle activities are the outcroppings of the most fundamental instincts and emotions in human nature...Human character is an expression of the instincts exercised...The quality of the character developed depends upon the type of adult leadership...Physical education contributes to the ideal of citizenship in proportion as it inculcates in children adult standards...This is accomplished only by a painstaking, standardizing leadership."

Williams concludes that all native impulses are not worthy; hence some must be inhibited either through disuse, through punishment, or by substitution. The latter method is best for the teacher. Pavlov's classic experiments on the conditioning of reflexes suggests to Williams that it is possibly in a similar fashion

that inhibitions are developed in children. The laws of learning as set forth by Thorndike (i.e., the Laws of Use, and the Law of Effect which modifies the former) can and should be applied to learning in physical education. The old view, both in general education and physical education, was that obedience, order, attention, reasoning, judgment, discrimination, etc., were general powers of the mind, transferred normally from one situation to another. However, it has been proved by experimentation that any transfer of the effects of training is due to the carrying over of common elements, of new information, ideas, devices, attitudes, habits or methods of work. That habits, information, and general attitudes do transfer is of prime importance in physical education. Irrespective of method, material or leadership, there are always "concomitant learnings"—that is, ideas and attitudes are continuously formed. The situations and the leadership should therefore be of such a nature that the desired appreciations and ideals will result.

1. "Physical Education must provide opportunity for the individual to exercise the desirable instinct mechanisms by which socially useful traits may be developed... and must offer opportunity to the individual under wise leadership to meet educative situations as one of a social group."

The opinions of these men have been derived from years of successful experience, as well as from deep study and thought, and they should, without doubt, be given full recognition. But since their principles are based psychologically to a large extent on the early work of the objective school, it becomes necessary to look into its subsequent development. It is the privilege and the responsibility of every sincere teacher to keep

informed on the progress of the sciences related to his own field, and, whenever possible, to apply the facts they contribute. Above all others the study of psychology is basic to education.

VI.

Sandiford lists the trends of modern psychology as follows:

1. It links up the behavior of human beings with that of lower organisms.
2. It is objective in its methods; its conclusions and generalizations are open to verification by other workers.
3. It is more definitely experimental than the older psychology.

The application to any field of phenomena of the scientific method inevitably brings an objective trend. However, as Mead states, all recent psychology that claims to use the scientific approach would consider itself objective, while behavioristic psychology by a study of lower animals shifts its interest from psychical states to external conduct. Prebehavioristic psychology, he continues, had a foot in two worlds—"consciousness" and the world of physiology and physics.

Thus, in the determination to make psychology a natural science, recent psychologists were lead to make human behavior their subject matter. Even though their methods were those of science, like all other beginners of new movements, they received the condemnation of older schools. But is objective experimentation new in psychology?

3. Woodworth, R.S.; Four Varieties of Behaviorism Psychol. Review 31; p. 258
Titchener and others, was just beginning to take shape as a genuinely introspective science. However, though objective observation has always bulked large in psychology, little attention was paid to its bearing on the general definition of psychology until Watson proclaimed: "Psychology as the behaviorist views it is a purely objective experimental branch of natural science which takes the whole field of human adjustments as its own... Its closest scientific companion is physiology, however it is interested not only in the functioning of the parts of the animal but intrinsically in what the whole animal will do from morning until night and from night until morning. It aims to predict and control behavior."

Regardless of any stand taken on introspectionism, no facts acquired by a truly scientific technique can be rejected. As a matter of fact, objective psychology does not repudiate the method of introspection, (i.e. that of observation used in all sciences) but only that type which claims the ability to analyze the central processes of the nervous system to know them directly.

What introspection does do is to analyze some stimulus-symbol imputed to the central processes, but such a stimulus-symbol is not sufficiently representative because we have not yet the knowledge to make it so. The verbal report, not as a report symbolically valid on its face, but taken causally as a response to stimuli, is useful. We know indirectly not directly. Knowledge must be obtained by the confirmation of potential symbols by social action and behavior; otherwise it is meaningless.

In dealing with the tenets of objective psychology it is first necessary to review certain pertinent facts of human physiology. Man is by his basic make-up a stimulus-response

1. Watson, J. B.; loc. cit., p. 11.
organism. He is constantly receiving stimuli both internal and external, and is so constituted that he must respond. The simplest response mechanism is the reflex arc, consisting of an afferent neuron from a sense organ, a central neuron in the brain or cord, and an efferent neuron leading to a reacting organ. Hence, the human organs of principal interest for psychology may be grouped as follows: (1) the sense organs or receptors- external (eye, skin, ear, nose, etc.) and internal (those in the viscera, the muscles, and the tendons). (2) the reacting organs or effectors- the striped or skeletal muscles and the unstriped muscles and glands. (3) the conducting organs or the nervous system- the brain, cord, and peripheral nerves. The nervous system may be arbitrarily divided into two parts the cerebrospinal and autonomic, and it is the cerebral cortex that having developed probably in the service of the autonomic system, differentiates man from the lower animals. Though it serves as a connection between the receptors and the effectors, the nervous system should not be overemphasized, for it is the whole organism in each and every part that does the reacting. Simple responses quickly become complex by the inclusion of more than one central neuron in the arc or by becoming grouped in a number of compounds, such as: allied and antagonist reflexes, chain reflexes, circular reflexes, and conditional response. In the conditioned response an afferent neural pathway acquires a new outlet, which fact is of far-reaching significance in human and animal behavior. Apparently it is by all of these processes, but particularly by the latter, that learning takes
place, though of the millions of unit responses with which man starts life relatively few are ever utilized.

What are the unlearned unit responses, to which the term "instinct" has in the past been applied? Psychology has come to the conclusion that they are far more numerous and far simpler in composition than it was earlier believed. Instead of inheriting such intricate habit systems as cooperation, cleanliness, running, climbing, hoarding, play-ad infinitum, man inherits hundreds and thousands of simple responses capable of untold combinations and integrations. Regrettable as it may seem to some, such a change was unavoidable with the application to the problem of scientific technique. Bernard, Josey, and various others have written entire volumes on the refutation of the instincts, but the most crucial scientific criticism may be stated with Allport thus: 'the instinct theory begins at the wrong end of the developmental processes by seizing on a completed activity and reading back into the life of the individual on inherited purposive development in the direction of that activity, one determined wholly from within.

In view of the uncertainty of the maturation hypothesis, it seems best to adopt the genetic viewpoint and begin a study of human responses when they are demonstrably innate at birth'.

The genetic approach was adopted by Watson and he has undoubtedly performed a genuine scientific service by beginning a study of the unlearned behavior of infants under controlled laboratory conditions. He and others have concluded that most of the asserted instincts are consolidations of unlearned responses and learned behavior, with great predominance by the

1. Allport, F. H.: loc. cit., p. 81
latter. Watson's tentative "Activity Stream", as well as the various
experiments, Sandiford's full list of reflexes, and other such compilations make vital and instructive reading, but for present purposes we may use the summary of unlearned equipment
made by Allport. He applies to these responses the term "prepotent reflexes" because of their original potency over other stimuli in controlling the final common path and because of the strength of their influence in habit formation. His six general classes of responses are grouped under two headings:

I. Avoiding reactions

1. Starting and withdrawing (appears at birth)
2. Rejecting reactions (appears about third day)
3. Struggling reactions (at birth)

II. Approaching reactions

4. Hunger reactions (at birth)
5. Sensitive zone reactions (in the early weeks of infancy)
6. Sex reactions (await the structural developments of puberty)

Unconditioned Stimuli

- Loud sounds
- Loss of support.
- Noxious stimuli on the body.
- Restraint of bodily movement.

Unconditioned Stimuli

- Internal stimulation (contraction of stomach muscles)
- Stroking, tickling, rocking, patting, etc.
- Internal stimulation.

From birth on this equipment is rapidly over-laid by learned behavior, by conditioning, hence, childhood is not a period of "unfolding" systems but a period of opportunity in which almost any types of reaction may be built in.

How does learning take place? The child learns because of his unusual neural equipment and because his environment makes individual modification necessary.

1. "The key to learning is found in terms of the overflow of excess neural energies, through the complex neural centers, together with the resultant random, spontaneous activity of the full musculature of the body... Learning is the modification of behavior made by the individual when he is forced to face situations of which he has no innate or previously learned response."

According to the authors of preceding statements, the typical act of learning has five stages: random excess activity, directed activity, adaptive activity, repetitive activity, and coordinated activity. The Laws of Conditioning are worthy of the serious study of every teacher. In general they confirm and supplement Thorndike's Laws of Learning. The vexing problem of the exact neurological procedure in selecting successful reactions and inhibiting the unsuccessful remains largely unsolved. Valuable suggestions for the educator, too numerous to list here, are to be found in the results of experimental investigations on the learning process, the essence of which may be expressed in three words—repetition with attention.

If an undesirable habit system has become established it is necessary first to uncondition and then to retrain the individual. Attention, which may be defined as the complete dominance at any given time of a particular habit system, is gained largely through interest. This leads to the all important question of the control of conditioning.

Allport's view that the law governing the learning process is that of the fixation of the most economical method of satisfying the prepotent demands, gives the cue to control.

2. Symonds, P.: The Laws of Learning pp. 405-413. J. E. P. XVIII.
i.e. directed conditioning by manipulation of the fundamental avoiding and approaching responses. These reactions become conditioned so quickly after birth that it is only with the newborn infant that they are applied in elemental form. Since it is fairly well agreed that people start life emotionally, and that education is largely a matter of gaining powers of discrimination and selection, it is worth while to consider Watson's conception of the undue influence in conditioning of unverbalized emotional behavior. Every complex bodily response involves manual, verbal, and visceral organizations, with the exception of the organization put on in infancy (one and a half years and under) and that put on throughout life where visceral segments are dominant—these two are lacking in corresponding verbal habits. This unverbalized organization (along with behavior in which verbal organization is temporarily blocked) very likely makes up the Freudian's 'unconscious', that is being 'conscious' is merely a popular phrase descriptive of the act of naming our universe of objects both inside and out. Simple emotional responses (listed by Allport under: Starting and Rejecting reactions or Fear behavior; Struggling reactions, Rage behavior; Sensitive zone, and sex reactions or Love behavior) soon become complex through a conditioning that 'is harum-scarum, unwatched, unthought of at the time, hence making adult emotional behavior harum-scarum, dis-orderly, and unpredictable'. The demonstration of the fact that man can control and train this "unconscious" is an

invaluable contribution of scientific experimentation. By
determining what stimuli call out the fundamental responses,
means are supplied for the wise direction of infant conditioning,
particularly of emotional habits, thus laying a sound foundation
for adult behavior. Thinking is predominately verbal (though
in it as in all other behavior the whole organism is implicitly
at work), hence to control life-long visceral organization we
must build in simultaneously a corresponding verbal world.

1. "Is it too unattainable a social ideal to believe that every
man, woman, and child should be thoroughly trained about his
own organism?...We could very quickly teach children enough
anatomy...and physiology...to give them a working notion of their
body and its functioning...Isn't it more important for them to
get this early—this exploration of themselves—than to get
their literature, geography, history, chemistry, and physics,
important as these subjects are?...Next we should teach the
rudiments of hygiene (what many call "mental hygiene"), show
them in the simplest kind of terms how infantile unverbalized
behavior arises and how it is carried over into adult life...
work out with them how the individual behaves in depressions...
how easily seclusion behavior develops, about invalidism and
other nascent psychoses...Teach them first how to spot these
reactions in others, and then, most important of all, how to
spot them in themselves by watching and tabulating their own
behavior...Unless the child has a word organization—a word
for every situation—and unless the stimulus can arouse a
verbal reaction simultaneously with the manual, which in turn,
acting as a stimulus, can arouse a substitutive manual reaction,
how can thinking ever become dominant?...When this has been done
the 'verbalized' will regulate all behavior. It will then
dominate the gut. Now everyone admits that the gut is the
tail that wags the dog."

At once there occurs the vital question of how verbalization
itself evolves. Watson by his treatment of the social origin
of language and his suggestion that the school (organized social
control) should give the training necessary for verbalization,

evidently realizes, though he does not develop, the significance in this respect of social factors. Allport gives an indication of the source of this control in saying that 'during the first two or three years of life every event of importance to the child's well being occurs through the ministration of other persons...obviously through the law of conditioned response, social stimuli acquire an early and universal significance...

He elaborates this in listing five stages in the genetic development of social consciousness as follows: first, the child becomes aware of self as opposed to thwarting agencies; second, social objects are recognized and responded to in a manner quite different from that toward non-social objects; third, the child becomes conscious of those about him as selves similar to his self and learns the regard for others that is the basis for social life; fourth, he sees himself as a self recognized by others just as he recognizes them; and fifth, he strives to become as others wish him to be, the social self and the real self coalesce'. Though Allport advances a social behavior account of the origin of language and discusses the possibilities of co-acting and face-to-face groups, one does not feel that he takes into account the full force of social influence.

Mead and Dewey both show a social behavioristic conception of the mechanisms of language and thinking (the symbolic process) both in origin and development. John F. Markey, in the Symbolic Process attempts to discover whether such terms as "mind", "knowledge", "thinking" cannot be more completely

2. and 3. See Bibliography: Mead and Dewey.
explained in terms of the behavior of organisms than by positing
them as separate elements introduced ex cathedra. The following
is a summary of his conclusions on the symbolic process, and its
relation to social control:

1. "Language symbols are integrated in a social behavior
process and their content is action—such integration shows
a continuity with that of lower animals and with other forms
of human behavior... Causal relations are demonstrable and
the presuppositions of a physical and chemical basis are
valid...It is in the symbolic process that the "self" and
"other" aspects arise and these in turn are fundamental
to the origin of symbols and reflective behavior. These
aspects are group unities and exist only in social interaction...
The origin and rise of symbolic behavior requires the sub-
stitution and interchange of social stimuli. This is seen
to occur in the social-vocal-auditory situation. Hence,
knowledge, meaning, and ideas are acquired indirectly in
a social medium...The fact that the individual's self or
personality is only realized in symbolic integration (a group
phenomena) means that this type of control may be very decisive
if manipulated properly...A person is dependent ordinarily
upon a whole complex of groupings for his very existence
as a person...The "bad" or "good" boy is a creation of the
group...Besides the control depending upon the reflective
behavior of the individual, there are all those non-reflective
modes of action which may be determined by the adequate control
of the group situation including physical conditions and
stimuli...Mores consist of symbolic standards which have
become common and obtained sanction as conducive to the
welfare of the group...Group experiences are always different,
hence the symbolic process besides merely manipulating
stimuli acts as a generalizer of experience...Although
emotions are generally regarded as individual, still the
manipulation of symbols which have been properly conditioned
to the emotions of the group may thereby produce a group
unity and morale which is a powerful means of group control...
Some are of the opinion that groups will ever be able to act
rationally to any extended degree...yet machine industry and
technology does undoubtedly introduce the mass of the
population to active participation in causal operations...
their symbolic behavior must incorporate this type of
reflection...The long-run effects in relation to rational
social control are yet to be determined."

Organized education is possibly less concerned with the
direction of the group as a unit than with the molding of
individual personality. Given a true realization of the origin
and manipulation of social control, it is not impossible to hope
that the school may help to shape the environment so that ration-
ality will dominate in individual behavior and in social objectives.
Is it to be wondered that educators are at last beginning to more
fully utilize Froebel's principle of "socialized activity"?

VII.

Though the treatment will be incomplete, certain vital im-
plications of these facts for physical education merit discussion.
The comparatively new "socialized activity" approach is perhaps
not so new in physical education as in general education. Though
it did not rest on as sound a psychological basis as does the
present movement, the trend of the natural school was in a similar
direction. In fact, the practical utilization of socialized material
by the "new physical education" may be credited as a factor in
the awakening of educators to its values and possibilities.
Certain fundamentals of the new approach, such as standardized
grouping, socialized recitation, the project method, motivation,
and the socialization of the curriculum, have been partially
applied in physical education but should be more fully employed.

The necessity for a careful and standardized grouping is
increasingly being felt. Every child has a right to the encourage-
ment that comes from success and he can only succeed in a group
where abilities are fairly equal, where work is suited to his
abilities, and intensive study is given to individual needs.
The child cannot find freedom and growth in a situation in which
he feels incompetent; he can develop initiative, originality,
and responsibility only in a group of approximate equals. His work should be so adjusted that his best efforts are demanded; progress within graded groups or squads facilitates this adjustment. Unless he can attack his work with the hope of success, the self-confidence and self-respect necessary to adult efficiency will not be engendered. The grade in school, since the modern trend is to base it on a teacher rating and I. Q. as well as chronological age, gives a fair start for grouping in physical education. Teacher rating as exemplified on the new type of report card includes much more than mere judgment of progress in school subjects; it includes such items as general adaptability to study, social adjustability, health progress, etc. A thoroughly modern school system of any size employs a plan of classifying pupils not only in "accelerant", normal, and "slow" classes, but also in special units for the mentally deficient, the neurotic, the physically handicapped, and sometimes the foreign born. Though physical age (anatomical and functional) roughly corresponds with the mental age even when it does not tally with the chronological, there will be many cases in an apparently homogeneous class needing special attention and further classification. It is obvious that a careful physical examination is fundamental. From such an examination, in addition to its use as a basis for segregating the physically defective, may be computed the height-weight-age correlation of normal students to serve as a basis for physical classification. Within each class, squads should be arranged according to motor ability. Perhaps the best single test is that of speed in running, but this should be preceded by tests in as many of the following as possible:
1. Throwing (for accuracy and distance)
2. Agility (in tumbling and stunts)
3. Jumping (broad jump)
4. Climbing (pull up, ladder, wall, or rope)
5. Swimming (simple events)

The intraclass squads should have pupil leaders who with the aid of the teacher will attempt to call out the best efforts of their classmates. Such a sharing by the teacher of his directive activities as well as the maintenance of an advisory and helpful attitude, establishes him not as an alien authority but as a co-worker. Squad leaders though chosen for ability and service should be changed rather frequently to give as many students as possible the opportunity for responsible leadership. "Problem children" are often drawn into unity with the group when all other methods fail by being given responsibility as pupil assistants. Besides giving the individual a fairer chance for success, this type of grouping furnishes the groundwork necessary for socialized procedures.

Ordinarily recitation is not conceived as a part of the physical education lesson plan, and though it would hardly take a part of this activity period, socialized discussion of certain class and school projects, of physical and mental hygiene problems, of leisure-time activities, etc., is assuredly the concern of the physical education department. As all departments in a modern school are closely integrated, this pupil-lead discussion on matters of vital interest to physical education will find a place in many classes. From the standpoint of departmental organization, hygiene classes will perhaps be more directly related, but the planning and carrying out of a large project.
say a school festival, is inconceivable without the interaction of all departments. The major responsibility in health instruction and habituation often falls to the department of physical education, along with its usual assistance in daily inspection and physical examinations. The problem of teaching physical and mental health is that of giving the child sufficient knowledge of and desire for self-direction. In the simplest manner he must be given an understanding of physiology, of the foundations of physical and mental health, of the origin and control of emotional behavior, that will enable him to become rationally self-correcting. As children are not directly interested in adult-hygienic standards they must acquire health ideals through their desire for school achievement. The value of good physical condition is easily seen in physical education activities and it is possible to expand this conception to one of the maintaining of health for all the functions of life. The report card marking on social and health progress gives a tangible base for class discussion of standards and objectives.

The project method is defined as an undertaking definitely purposed, planned, carried out, and judged by the pupils themselves. In physical education classes the pupil objective will usually be the acquiring of some motor skill for its own usefulness or as a unit in a larger activity. Squads may develop a particular project, or one may be undertaken by the whole class, several classes or the entire school. The project method has untold possibilities in physical education. Except such specialized work as might be necessary for individual therapeutics, all physical activities should be conducted on this plan. It
is applicable even to a relatively simple motor problem, for example: the pupils wish to play a game of low organization, they attempt it and find they are unable to carry it through successfully, they appeal to the teacher and to other sources of reference for aid, devise and execute their own practice drills subject to his suggestions, and finally participate with increased satisfaction. Squads may practice a team game for intraclass sport, each squad may study and present a folk dance from a different nation or the class may plan and put on a circus, or the whole school may undertake a posture week, or a field day. Even the physically handicapped may take part in a great many social activities, for here and throughout the school the aim is not the intensive training of the few but full participation for all. In working on motor projects the child learns to handle his body efficiently, to think through problems in a manner that is applicable to other fields, to submerge his own desire for a common goal, to recognize and seek those qualities necessary for joint activity; he gains too an understanding of human nature and an ability to work with others which are fundamental to sincere cooperation. Whatever the project, it should grow from recognized needs and contribute to a more abundant living. The "socialized" skills acquired should be those which will secure the continuance needed for adequate development and which will fulfill the recreational needs for adult life.

Educating for leisure finds an alley within the physical education program, as well as in such developments as "Hobby Clubs" (obviously many of these could be centered around various physical education activities). The deadening monotony of modern industrial work can only be alleviated by an economic reorganization.
but even with this accomplished, abundant living will always necessitate an appreciation of the arts. To the latter goal, physical education will ever remain dedicated.

In all socialized activity the failure of any one pupil to do his part halts the progress of the whole, hence, individual effort and initiative are motivated not by a desire to surpass others but by a willingness to make a worthy contribution to a common undertaking. The end results of projects may be graded by the teacher but of far greater import to the individual is the approval or disapproval of fellow workers. In discussing motivation it is well to remember that pupil and teacher objectives are not identical. The pupils are intrinsically interested in the activities and their completion, while the formulation of symbols of conduct, of health ideals, of moral standards, etc., rests largely on the guidance of the teacher. He must see that the conduction of activities is such that the pupils themselves evolve those standards that are most worth while. One does not preach sportsmanship to children but rather selects and supervises those types of activities (team games, group dances, squad projects) that will bring with them the condemnation of the shirker, the bully, and the poor sport. Practice and achievement tests as instruments for gaining motor skills, should be carried on and charted by the pupils, and the tests themselves must foster skills that are individually and socially useful. The following is suggested as a possible scheme for marking in physical education and the pupils themselves may assist in the tests:
1. Spirit (attitude, effort, sportsmanship) -- 30 points.
II. General quality of work (all activities) -- 30 points.
III. Seasonal achievement test (degree of improvement) -- 25 points.
IV. Health habits (posture, daily inspection) -- 15 points.

Total 100 points.

In marking a pupil on the degree of improvement in the seasonal achievement test, it is best that each squad be judged by a separate standard according to the motor ability of its members. For example, work receiving a B grade in Squad II. (those next to the top in motor ability), would receive only a C grade in Squad I; however in Squad III. the same work would receive the grade of A. If emblems such as school monograms are to be awarded, let them stand not for ability in one particular line but for the qualities emphasized by the report card, for the reaching of a certain standard in all phases of school life--in scholarship, citizenship, health, participation, and character.

The natural program in physical education does much to socialize the material; the application to it of socialized planning, of standardized grouping, of socialized motivation in place of individual competition, greatly increases its worth. It is easily seen that Hetherington's list of Natural or Play Activities, interpreted through these channels forms a splendid foundation, care being used that the activities emphasized further the prime objective--the development of social consciousness. These activities retain their value in assuring organic, nervous, and neuro-muscular development--do they lose in interest or in educational potentialities by partially loosing their"instinctive" bases?

2. See Code of Honor, Peckstein and MacGregor; loc.cit., pp.254
The "instincts" or unlearned responses play perhaps no greater part in physical education activities than in general education, for each act since it functions as a unit cannot and need not be dissected into its two basic components of the learned and the unlearned. The child does possess a biological need for activity, a ceaseless flow of energy necessary for growth, and this finds expression in play activities. The project method when applied to these activities is not something superimposed but simply the child's own way of carrying them out; the interest is indigenous. Play view in the light of modern psychology has little definite neural organization, yet it is upheld as the one avenue of growth. Is it not rather an attitude of giving oneself to the task in hand? Certainly this attitude is worthy of nurture, while a real enjoyment of the best in physical activities is connected with a similar appreciation of many other fields. Nursery schools are proving that even the toddler seeks companionship, that it has been a lack of opportunity rather than a lack of desire that has prevented a more complete socialization of the younger child. Each year the child comes to require more and find greater joy in association with others. Even in early years he desires nothing so much as social approval, and this fact, with his complete dependence on society for his very existence as a person, gives the foundation for the shaping of character.

Need character development rest on an exercising of the instinct mechanisms? Is the fact that the child inherits, instead of fixed and complex action patterns, a highly flexible

neural organisation which can be systematically molded, a
detriment to the inculcation of character?

"Is this view mechanistic? Yes, utterly... But is there
anything especially revolting in believing that man's hands
can take the living protoplasmic mass we call the child
and shape it according to the specification demanded by our
present social standards? No, the only hopeless and dangerous
mechanists are the predestinarians and propagandists for
the inheritance through endless ages of 'mental traits'...
Isn't it far better... to find that, instead of instincts in
the child which are irrevocable and beyond our control, he
has limitless plasticity at the start? Doesn't it give every
parent, every potential parent, a kind of open as well as
secret exhilaration to learn that his child does not have
to carry along many of the weaknesses and inferiorities
he possesses?"

Doesn't it give the teacher new inspiration?

As the total personality of the individual is a product
of social interaction, so too are the standards of morality by
which he is guided. When we discard such a phrase as
"character through the exercising of instinct mechanisms" then
truly can we speak of "offering opportunity to the individual
under wise leadership to meet educative situation as one of
a social group". However, personality is limited to the
number and types of groups in which the individual is associated.
The problem is not only one of leadership but also of increasing
the variety and size of groups. Projects in which the whole
school, and often the community, takes part are of great worth,
and such activities as student government, school assemblies
and campaigns, pageants and choral fests, etc., are invaluable.
The unit must be ever increasing in size so that the student becomes
aware of unity with larger and larger groups and capable of fuller
social responsibility. These two are the prime elements of true
social consciousness.

BIBLIOGRAPHY

   American Physical Education Review, November 1928, p. 578.

   Charles Scribner's Sons, New York, 1922.


15. Lee, Joseph: Play in Education.

   Lea and Febiger, New York, 1928.

17. Markey, John F.: The Place of Language Habits in a
   Behavioristic Explanation of Consciousness.
   Psychol. Rev. 32; 384-401.
   The Symbolic Process


   Junior High School Pupil.

21. Peterson, J: Intelligence Conceived as a Mechanism.
   Psychol. Rev. 31:281-7

22. Reagan, G. W.: Principles Relating to the Engendering of
   Specific Habits.
23. Rice, E. A.: Brief History of Physical Education.  
A. S. Barnes and Company, 1927.
24. Rousseau, J. J.: Émile; or, Concerning Education.
Psychol. Rev. 31: 381.
26. Sandiford, Peter: Educational Psychology.  
27. Sherrington, C. S.: The Integrative Action of the Nervous  
System.  
Harper Brothers, New York, 1928.
pp. 405-413.
Teachers College, Columbia University, New York, 1923.
31. Watson, J. B.: Psychology from the Standpoint of a  
Behaviorist.  
32. Williams, J. F.: The Principles of Physical Education.  
Organization and Administration of Physical Education.  
34. Woodworth, R. S.: Four Varieties of Behaviorism.  
Psychol. Rev. 31: 257-64.
35. Young, P. T.: The Phenomenological Point of View. 

36. Credit for Extra Curricular Activities. 
American Physical Education Review, November 1927.