

will not do it in school, he probably will not do it later.

The curriculum, especially from the high school up, should be elastic enough to adapt to the different kinds of pupils. Original nature endowment, interests, neuro-muscular skill potentialities, all differ. There is evidence that the distribution in these qualities is nearly normal; but the same individual may be relatively higher on the curve in one element than in another. In the high school, electives in the mental curriculum are offered to meet this situation. The same should be true in physical education. Some groups should emphasize the fighting types of activities more than other groups. The individualist should have some choice in the more individual activities, such as track and field, handball, tennis, golf, apparatus work, swimming, and the like. The aesthetically inclined should be allowed to elect more dancing. This means different classes with different balance of activities - probably there should be a warp of fundamental skills running through all.

This curriculum should be continuous from the kindergarten to the college, but should allow more rapid promotion physically than mentally, or vice-versa, to meet the needs of the individual. It should be possible to give a rather complete physical education by the age of sixteen. If such an education is not started until high school or college, as is true in too many cities now, it is possible to give a physical education, but it is working against the current of habits of mind and body, and usually little of educational value is accomplished. This could be remedied, however, with better and more equipment, better trained teachers and smaller classes.

In adapting to sex differences, it would seem important to determine objectives for women even more carefully than in the case of men. The shifting of women from the home to industry and the professions, competing with men on an equal footing and with no mean physical and physiological handicap, introduces an element to be reckoned for. For what should women be trained? Should we stress aggressiveness and fight, or aesthetics and individualism, or both? What should be the balance of these types of activities, and why? These are questions which would appear to be fundamental if we are to educate women through physical activities. The physical educational questions of anatomy and physiology need less dogmatic statement and more controlled experimentation.

7. The material should be selected for content, and not for form; for efficiency, not for looks. The important question is not, "How does it look from the gallery," but, "Will it accomplish the results?" To illustrate the point, we shall very briefly discuss dancing as now taught to women.

Dancing - at least the natural variety - was primarily the portrayal of the feelings through bodily movement. In this sense, the wild jumps into the air of the ardent rooster when the home team makes a touchdown is natural dancing of a very crude type. In evolution of dancing, a technique was developed to express the finer emotions through appropriate movement. This differed from the crude type in much the same way as the soulful playing of a Paderewski differs from the off-key whistling of that happy individual who just must express himself musically or burst. In between the extremes will be found all kinds and degrees of dancing; but it should all be of a type, such as will educate in the expression of something within the in-

dividual. This expression may be the expressing of a fine, sensitive, emotional nature, or the cruder, rougher expression of the emotions of the coarser natured fighter, but it should be expression, not calisthenics.

The content of dancing now taught in physical education contains much of the highest value, and much which is of no educational value at all. The types of dances that evolved from the history of a people - as did some of the better folk dances - and the types which have been developed to really express something, such as the natural dances of Miss Margaret N. H'Doubler, Miss Gertrude Colby, and others, are usually of educational value. The type that have been invented in the enthusiasm of that individual who wanted "something different" is usually of little or no educative value. The type of clog dance that expresses the nature of the negro of the plantation has much of value in it. Much of the invented clog dance, the writer believes, is nothing but a rather difficult kind of calisthenics, in which the dancer is more intent upon getting the steps just right than in expressing anything within. The same is true of much of the stage type of so-called aesthetic dancing. Out of all this wealth of material should be selected only that which expresses, and the rest discarded entirely. Whether it be a masculine or a feminine type of dancing, it should be chosen for content, not for just exercise, for looks, or for technique. The same principle should apply to other kinds of teaching material.

8. In-so-far as possible, the material should be modern. The content of the traditional physical education teaching material is largely military. We conceive of the function of our schools to be that of primarily training students to be citizens, not soldiers. Incidentally, the real qualities developed in a scientific program will be such as to make one a good soldier - look over the objectives again. America thinks that she believes in a social democracy. If so, let us train students to be citizens of such a democracy. This would eliminate much of the old type of regimentation which was primarily intended to mould the mass into an unthinking machine, or to develop some mythical discipline. Track athletics are of more value than the same time spent on marching; defensive exercises with a walking stick are of more value than fencing with a foil; learning how to defend oneself from a thug is better than the same time spent in wand exercises. We should think in terms of today's need, not in terms of the eighteenth century.

9. The material selected should be selected because it is the best possible, not because it is just good. It should be good enough to displace some other material. It must be worth the time spent on it, or in other words, it must pay its own overhead. It must be of such a nature that it can be taught effectively where it comes in the curriculum.

10. The material selected must be adapted to the equipment available. Most of this teaching is in cities where grounds and gymnasias are limited, and this situation must be kept in mind while making the curriculum. There are a few essentials, however, that must not be lost sight of:

(a) The writer does not believe it possible to get first rate results with classes much larger than thirty. The classroom has pupils five hours a day, and feels that forty individuals is a large class. The physical director seldom has them more than forty or forty-five minutes, and must have action or get little result. Classes of fifty to one hundred in one gymnasium preclude physical education - all that can be done is exercise. If there are sufficient grounds or gymnasias and a sufficient number of well-trained leaders, a large class becomes, in reality, a number of smaller

classes, which is almost as effective as having smaller classes.

(b) There should be adequate bathing facilities for all, even in the elementary schools. Exercise which produces profuse perspiration should be done in uniform, and should be followed by a bath.

(c) There must be enough teachers to do this work well, to organize intramural activities, and to do the necessary clerical work connected with the administration of such a scheme.

(d) There should be a really adequate medical service, both for examinations and for remedial stunt health work. This is available in very few school systems today.

In most schools in this country, we fall short of the above. The attempt should not be to just adapt to conditions, but to attain to the ideal. Thirty years ago, few schools had adequate laboratories for science teaching. Persistent propaganda on the part of intelligent educators secured it. The same must be done for physical education. Not only must facilities be given, but more time. The minimum should be five hours a week.

If the material for physical education be selected according to the above ten criteria, it would seem that a few things should stand out clearly in our minds:

1. The educational objectives can be best accomplished for both sexes by using the more highly organized hunting and fighting games, competitive athletics, some of the "stunt" type of activities, and - especially with girls - natural dancing. These should be the types of activities which would directly lead to the accomplishment of the objectives in the most effective manner, if properly presented by the teacher and mastered by the student. In every case, the teacher should proceed from the objectives to be accomplished to the methods to be used to accomplish them.

2. All students are not equally skillful, and most are not skillful enough to utilize these activities advantageously, they must be led up to it gradually. This should be done by carefully grading the students and the activities, and by arranging, the teaching material in such a manner that every day's work leads to the next. For example, if students are not skilled enough in basketball to use it advantageously as an educational device, other games or contests containing the elements of basketball should be taught. These may be relays containing passing, shooting, or dribbling as part of the race, or they may be simpler games containing these elements, with less physical contact, and giving the player time to make his reactions - for much poor basketball is due to too hurried thinking. Then there may be a teaching of the fundamentals in a type of imitative calisthenics, a sort of mass coaching, as it were, followed by work on these elements in squads. The same sort of thing to a lesser degree can be done for track and field athletics. The elements first taught en masse, and then practiced in squads for form, not for performance, and finally used in competition. The same principle can be used for many other activities. At present, most men are taught these activities by the same technique one uses to teach a pup to swim - throw him in; if he swims fairly well, give him more practice. If he drowns, pass him up as hopeless, and let it go at that!

3. The material selected should be well balanced, and should be used only when justified by results. The law of diminishing returns applies to the use of any teaching device as well as in economic fields. For example, if twenty per cent of the time spent on dancing gives what the instructor would think of as a fifty per cent result, and thirty per cent of time spent would give a seventy-five per cent result, the extra ten per cent would be justified. If a further increase of time to forty per cent gives an increase in result of only five per cent, this last ten per cent is not justified by the results. Hence we need scientific, controlled experimentation to determine just how much time should be spent at each stage of the curriculum on each type of activity, in order to cause the curriculum to give a maximum return for the time spent. At the risk of repetition, it should be again stated that every part of every curriculum must pay its way.

4. The teaching material should be selected with a view to future results, not just to the present "unfolding" of the child. It is a current conception in certain schools of educational philosophy that the "life" of the child at the time he is being taught is the most important thing and that this should guide the main thought of the educator. There is no doubt that the child's interests and efforts will be concerned practically altogether with activities that are of immediate concern to him, and that the educator must keep this in mind in the planning of a curriculum; but on the other hand, the physical educator must be looking ahead to the final result, and must plan a curriculum that will lead to that result, while at the same time being in many places disguised as to form, sugar-coated by presenting it as a simple game or contest, when ideally more progress could be made if there could be direct coaching in technique. It has been our experience that where the objective was clear enough in the pupil's mind, and was an objective which he felt was worthwhile, that much direct coaching in technique could be very easily motivated.

5. Fundamental activities should be stressed out of all apparent proportion to their direct values. To illustrate, it has been found that with a group of fifty Chinese students of physical education, who had had at least one and two-third years of careful training in the technique of track and field and athletic game activities, the correlation between records in four track and field events and skill (not "value to the team" which may be largely courage and fighting ability, coupled with fast thinking and experience) in basketball and soccer football ran from .75 to .92 according to the method of judging the skills. The average of correlations of able judges who knew the men well, and who rated them first by the Scott Rating Scale method, and then checked it by ranking them, was .86. This would indicate that these activities had enough elements in common with athletic games to justify their inclusion in a training scheme far out of proportion to their obvious educational value.

CRITERIA OF TEACHING FOR PHYSICAL EDUCATION

The material given here presents nothing new to the philosophy of education, being merely a re-statement of some of the important principles of the psychology of education. It is given here because of its general neglect in physical education and because the writer desires to give a rounded picture of the whole problem.

Physical education activities are no panacea by which the ills of a weak character may be automatically cured. The content of the curriculum can be made to present the possibility of such education, but this content must be made to function, educationally, by skillful teaching. To see that this curriculum educates, there are a number of items which must be emphasized.

To insure learning, there must be interest on the part of the student in the activities used. With few exceptions, even boys and girls who state that they "hate gym" confess that they would like to be able to do these activities, and that if they were able to do them, they would thoroughly enjoy participating in them. The major reason they are not interested is that they do not possess the requisite skills. Interest is probably distributed normally. There will be a few who can never be made to enjoy participation in physical education activities. There is evidence (data from Chinese university students) to show that skill in games is distributed with a close approximation to normality. Some are motor geniuses, and some are motor morons. If the same individual happens to be near the small end of the interest distribution, and also at the small end of the skill distribution, it is most probable that little can be done to help him. The same problem is presented in mental education in those who fall by the wayside in spite of all that our best school systems can do for them. It has been demonstrated however, that the curve can be moved over towards the right with skillful teaching coupled with a scientific curriculum. To accomplish this, the following things, among others, must be emphasized:

1. The immediate, definite objective which is before the eyes of the pupil should be one which he feels to be a worthwhile one. The pupil is seldom interested in piece-meal activities from which he sees nothing ahead. The formal type of calisthenics is seldom interesting, though the personality of a clever teacher cannot infrequently make it bearable, especially to those who, like some groups of adults, seek improved health as the primary objective. If the pupil sees that in his massed work there is a definite, pedagogical progress being made in the skills of the activities which he desires to learn, as athletic games, track and field, combative activities, or (especially in the case of girls) dancing, experience has shown that he will be interested and will work to attain that end, if the dosage is not too large. But he must know that objective and appreciate it. The teacher must see that his progression is sound and the purpose clear.

2. Teaching must be intelligible - the pupil must know the specific ends that both he and the teacher are seeking, and be able to tell the direction of the expected or accomplished improvement. In addition to skillful teaching, there should be standardized, objective tests of proven validity to measure performance; standards of attainment should be established for each activity used, and these correlated with a real curriculum as definitely taught and definitely required as are the corresponding ones in mental education.

3. The progression of the curriculum should be perfected to the degree that the most rapid possible progress may be made by the student, and so that only skills relevant to the physical education desired shall be learned, skills without clashing psycho-motor associations. "Ecclectic" systems are usually guilty of transgressing this requirement. Learning competitive skills and forming competitive associations involve double waste.

4. Drill work in important skills should be thorough to the point of over-learning. The high correlations between these fundamental skills and skill in the more complicated team games is significant.

5. The situation must be considered in all its phases - equipment, size of classes, grading of pupils, grouping of competitors - everything as completely arranged for, as it is in mental education in the best school systems.

6. The teaching must emphasize the formation of associations which will cause the traits and characteristics developed in the physical education situations to become generalized, or to have rich connections with the ordinary and extraordinary situations of life. The teacher should constantly but unobtrusively hold before pupils the ideals and ideas connecting desirable traits and characteristics stressed in the physical education practice with analogous elements in other fields of life. To this end the utmost use should be made of appropriate catchwords and phrases - "sportsmanship," "quitter," "hit the line hard," "it isn't cricket," "teamwork," "play the game," and many, many others. These should have their scope widened by the teacher to include all the activities of life. It is at this place where a great deal of skill and attention should be focused. Without transfer, there will be but a very partial physical education; and this transfer will not, the writer is persuaded, be automatic, except insofar as a rich motor experience in activities that involve ideas and word phrases - which transfer not a little - tend to give some degree of transfer. There is abundant experience, however, to demonstrate that skillful teachers do secure transfer to a very large degree. I feel that more real study is needed on this phase of physical education than on any other phase, for results hang more on this than on all else.

7. The teacher of physical education (why not all teachers?) should have the attitude of the coach rather than the traditional attitude of the teachers. The difference is, the traditional teacher attitude is that of teaching or presenting certain material to a class or group. The attitude of the coach is that of developing the abilities of each individual to the limit of his potentialities. The coach tries to make A. the best halfback it is possible for him to become, and to make B. the best tackle in the country. The traditional method of teaching physical education is to just teach activities and trust to luck that they will do some good. The attitude of the coach should, and will, cause the students to feel the real interest of the instructor, and will cause the instructor to demand results of his teaching for each man.

Where the above kind of teaching has been the rule, satisfaction in progress and in the exercise of the skills involved has been demonstrated to follow. In other words, learning takes place.

To secure any general attainment of these possibilities, at least the following three things should be essential:

1. The professional training of physical educators must be brought to a much higher standard, especially the "theoretical" or educational part. There must be a better selection and more rigid elimination of the candidates for admission to the better schools, and adequate recognition and reward to those taking the work. The college of arts and sciences is too often the obstructive agent here, denying recognition to anything

"applied," and making it difficult for such a course to secure footing. Physical education is still the educational orphan in this regard, not fully adopted into the educational family. There will always be a place for many teachers of mediocre talents, as is the case in mental education where all too often the teacher is the person that can be secured rather than the ideal. These lesser lights, however, should be thoroughly trained in the constructive use of the educational phase of physical education, especially in the use of the educational methods developed by research experts in that field and standardized for general use while further study is going on. In a phase of education so little standardized as physical education, we feel that relatively better trained teachers are needed for the rank and file than is the case in mental education where there is much better standardization of method. The need of contagious character and personality on the part of the teacher cannot be too highly emphasized. Schools of physical education which teach little but a smattering of biological sciences and physical technique should be placed on probation. "Without a vision, the people perish."

2. The methods to be used in activities, in teaching technique, in developing tests and standards of achievement, and in the measuring of qualities developed should be based upon investigation and objective research, not solely upon opinion. It is perhaps true that in the beginning, the methods used must be based upon the best thought of the few scientific and educational minded physical educators we have, but such a curriculum should be outlined with a rapid evolution based upon research in mind. Men who are trained in physical education, in educational theory, and in research technique should be secured, attached to institutions with adequate support, released from the usual twenty hours a week of teaching and given abundant encouragement and opportunity to find themselves in the important problems immediately demanding solution. There is ample precedent in mental education, and the task should not be nearly as difficult as in most pioneer tasks of this kind. It is especially essential that schools or educational institutions offering opportunities for such work be in the larger cities where adequate opportunity exists to secure data. It should be obvious that the important point of attack should be the grades and the high school, not the university, where it is usually rather late for extensive educational results. This research should not be handicapped for lack of funds. If thousands can be expended to devise a method to improve handwriting five per cent, it would seem as though funds might be available to improve character through physical education. Ten years of applied research on the part of even ten good men, with adequate assistance, could easily improve physical education five hundred per cent. A mixture of constructive thinking and moral courage, applied on a base of the scientific knowledge of educational psychology we now have, could effect an immediate improvement of at least one hundred per cent.

3. An adequate detailed manual of teaching technique should be developed as soon as possible, together with detailed laboratory manuals of the activities to be taught. There has been a pendulum swing as to syllabi in America. At first, there were syllabi in great detail, as in the case of the New York State Syllabus, the Michigan Syllabus, and many others copied from them, a mixture of material produced by different individuals, very uncorrelated, and not at all calculated to give the best results. There was a swing from this to the very sketchy outline type now so extensively used, which depends much upon supplementation by supervisors. We believe, at present, that there should be a detailed syllabus, but one written as a course of study, experimented with and improved, and

built to function as a whole. The poorer teacher can follow it to advantage, and the exceptional teacher can do as he has always done and always will do, depart from it in various degrees and blaze new trails.

This discussion of problems in the field of physical education has been limited by space to a few of the more obvious and important ones. The principles given are simply a review of the general elements from an educational philosophy in which the writer has confidence, with an application to the field of physical education. The contributions which, it is hoped, stand out in this paper are the emphases on the contentions that, (1) the system of physical education formulated should be built to meet scientifically formulated objectives and criteria, not just warped to partially meet changing educational demands; (2) there should be as much or more emphasis placed upon devising a means of securing educational results with the physical educational tool as upon devising the tool itself; and (3) adequate attention should be given by educational institutions to furthering better training in physical educational philosophy and teaching technique, and to fostering experimental study and research in this field to enable it to base its methods upon ascertained facts rather than upon speculation and logic, and to catch up, in some degree, to its older brother, mental education, and insure its educational as well as its health efficacy. The real root-problem from which may grow a genuine science of physical educational program and curriculum, and a real art of educating through physical activities, is the problem of the application of scientific method to the developing of physical education. The age-old patching of the old garments should cease, to be replaced by the creation of new garments cut by educationally competent hands; modeled in many ways on the proven parts of the old, but designed to fit the educational as well as the health needs of the pupil, not to perpetuate the stiff-collared educational fashions of the past. If this be done, progress will follow, and a real science of physical education will arise and prove itself worthy to be adopted into the educational family on a basis of full equality of respectability and accomplishment.

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