
by

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To Professor H. B. Hunsaker, I am deeply grateful for his suggestions, constant advice and encouragement in the development of this thesis.

To my wife, Madge, whose encouragement and constant aid made the completion of this thesis possible.

Ray Watters
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INTRODUCTION

The first organized program in physical education appeared in American colleges at the University of Virginia between the years 1850 and 1860. The first public school program appeared somewhat later. Since these beginnings, school and college programs have advanced steadily, keeping pace with our advancement in the philosophy of education and biological science. At the present time, almost all schools include physical education as an element in the curriculum.

Influences which have led to the establishment of organized physical education in our American schools and which have determined our theory and practice are distributed throughout human history for thousands of years. The most primitive man undertook to instruct the young in the various activities of a physical type which were involved in securing food and in other phases of self-preservation. The majority of these activities have disappeared from modern living, however, archery and wrestling are still popular activities in the physical education program(11).

The philosophy and ideals of Greek education have greatly influenced the physical, mental and spiritual aspects of life, but at the same time the Greek philosophy of education insisted upon the harmonious development of all powers and capacities of individual.

Nixon and Cozens (11, p. 24) give a description of early Greek education as follows:
The education of the Athenian boy consisted of "music" and "gymnastics." The term music included artistic, literary and musical training. "Gymnastics" includes the whole range of physical education activities employed in the training of the boy. These activities included, among other, throwing the javelin and discus, running, jumping, wrestling, and free play. This later fact ought to carry more weight than it does with the educator who tends to balance several hours of intellectual training with a daily allowance of from ten to thirty minutes of physical education.

Physical education was further influenced by the Germans in their practice of gymnastics and organized exercises. The German immigrants attempted the first organized effort to direct physical activities of school children in America at the Round Hill School, Northampton, Massachusetts in 1823 under the leadership of Charles Beck "a pupil and friend" of Freidrick Ludwig Jahn, the German physical education leader. During this early developmental period the German system of gymnastics came into conflict with the Swedish system developed by Ling one hundred years earlier. The Swedish system was supposed to have a scientific basis in study of the human anatomy with the objectives of developing poise and balance, whereas the German gymnastic system, which had a spontaneous origin in the militaristic period, had objectives of muscular strength and military precision. The school men of America, during the quarter century from 1890 to about 1915, looked in favor upon the German and Swedish system of physical education. Both were recognized as having disciplinary value. They required little apparatus, only a few minutes of time daily and a minimum of special training on the part of the students to receive maximum benefits.

During the past thirty-five to forty years an American system of physical education has been developing. The new physical education
has no place for exercises done to commands, except for a few special purposes. It uses informal or invented movements in the correction of physical defects, warm-up drills and the teaching of some skills in physical education activities (11). It undertakes to furnish skilled and intelligent leadership of children in the age-old activities of the human race, activities involving running, jumping, throwing, activities which have meaning and significance, which allow for mental development, which promote wholesome self-expression and offer desirable social training in a democracy.

Authorities in physical education agree that the present curriculum in physical education is a curriculum of sports which they interpret to include individual and team sports, rhythms, aquatics and out-door activities.

Staley (13, p. 114) makes the statement agreeing with our present trend of sports in physical education:

The word Sports is accurately descriptive of the type of activity normally carried on in the curriculum. As used here it refers to any vigorous funful activity. Most of the activities included in the original Greek program, most of the activities carried on in the program at the time of its revival, and most of the activities carried on in the present day program are distinctly of this type. The great majority of the activities included in the current physical education curriculum are commonly known as sports.

Need for the study

Modern education emphasizes the importance of adopting curricula to meet the needs and individual differences of students. The application of this principle in any subject implies the necessity for determining previous experiences of the students in that field. For physical education this means a familiarity with the previous playing experience and training of students. In other words, to make a
physical education program sound, there is a need of an analysis of the playing background of the individual student before present and future needs can be determined (13).

The current thinking of authorities (10, 7, 17) in physical education is that the college curriculum should be the elective type. Further, the courses of instruction in each of the activities should be designed to teach only the more advanced skills. Such thinking pre-supposes that the high school graduate upon reaching college has previously experienced a full, well-rounded program in physical education and is, therefore, ready for the more advanced courses in elective activities which have a high transfer of recreational value (14).

The situation described is far from that which confronts all but a few college physical educators today. Regardless of the extensive studies that have been made to evaluate and standardize the physical education curriculum for secondary schools, a great many high schools throughout the country do not have anything even remotely approaching an adequate, graded and standardized curriculum of physical education activities (10). Therefore, graduates are not prepared for courses involving the use of advanced skills offered at the college level.

LaPorte (10, p. 63) presents this explanation of the present physical education programs:

In a sense physical education is still an educational infant. It's growth has been spotty and irregular. Unfortunately, in many schools baseball or playground ball continues to be the one major activity repeated year after year from the third grade through high school with no attempt to provide a balanced program of varied activities. In many cases a physical education class consists of supervised play with no thought of instruction or progressive learning or adapting activities according to
physical or physiological needs based on health examinations.

Earlier, in 1936, Sharman (2, p. 44) points out a further weakness of our present physical education program in this statement:

"Many, if not a majority, of the entering freshmen (college) lack skill in variety of activities. Moreover it is quite possible that these freshmen might have sufficient ability to pass a general capacity or ability test or specific skill test and still lack play habits and attitudes and other desirable attributes which a one, two, three, and four year program might develop."

Another important aspect of this study is that of the student's interest. The present emphasis of educational philosophy upon the nature and importance of the individual as a unique organism can be clearly seen in this statement by Umstattd (15, p. 247):

"Every wholesome interest of the adolescent may become a dominant drive which carries him into school activities, which in turn give him development. School experiences should be drawn very largely from the interests and activities of the students."

Authorities (10, 7, 17) agree that student interest is an important factor in the learning process. Therefore, student interest must be given careful consideration in any study which attempts to evaluate curriculum.

However, this curriculum problem cannot be solved solely on the basis of student interest and student preference, although such interest is highly important. As a rule, students practice harder on the activities in which they are interested, and they learn faster those activities which they practice most.

Student interest as a factor in establishing a curriculum is further emphasized by Wayman (18, p. 121) in this statement:
It is strongly urged that each institution keep in touch with student opinion and reaction as to the activities of its program in some manner in order that the department (physical education) can be certain that it is meeting the needs of the student as represented by their interests.

If physical education is to meet the challenge of modern education, which undertakes to help the individual to develop his capacity to function successfully in the environment in which he lives, proper consideration to the needs and interests of each student in physical education activities must be given if the greatest results are to be obtained (11).

Statement of the problem

The primitive man undertook to teach physical education as a necessity of self-preservation. In more recent times, the Greeks, Romans, Swedes, and English are a few of the people who have played an important role in the development of physical education. These people and their influence have led to the establishment of organized physical education in our American schools. They have determined the theory and practices which are distributed throughout the human race. Today physical education should undertake to teach skills in a variety of sports which promote wholesome self-expression and desirable social training in a democracy.

The high school graduate, upon reaching the college level should have previously experienced a full, well-rounded program in physical education. It is the opinion of this writer that male students entering the Utah State Agricultural College as freshmen have not been taught a variety of skills in a variety of sports.
Therefore, it is the purpose of the present study to determine:

(1) the physical education background of freshmen boys matriculating at the Utah State Agricultural College in the fall quarter of 1950, and
(2) the current interests of each of these students in physical education activities.

Scope of the study

The scope of this study is limited to a survey and study of the physical education background, current interests and a self-rating of skills in physical education activities of the freshmen boys matriculated at the Utah State Agricultural College, Logan, Utah, during the fall quarter, 1950.
REVIEW OF LITERATURE

Inasmuch as physical education is no longer a mass program in the sense that the mass of students are subjected to the same program with the same activities regardless of interests, capacities and physical needs, it is essential that some specialized type of approach be made, especially at this time, where freshmen are concerned. The program should take into account the individual as well as group differences in background, preparation, knowledge, interests, skills and physical conditions.

This approach is being made in a variety of ways by those colleges and educational institutions which are genuinely interested in physical education as an individual problem (18). Many educational institutions are discovering the physical background and interests of students by approaching the problem in an organized and definite program or scheme known as a course in "fundamentals" or an "orientation" course.

Yet, with this recognized need for knowing the individual's background in physical education activities, very little has been written on the subject.

The writer was able to find only four studies (1, 2, 4, 14) related to the background experiences of secondary school students in physical education activities as factors in determining the content of the college physical education curriculum.

Perhaps the underlying reason for so few studies having been made and the relatively small amount of literature written concerning
background experiences in physical education activities, rests in the emphasis in recent years upon the importance of a program of tests and measurements as a basis for determining the needs of college students in physical education (14, 18).

More literature has been written concerning the interests factor of students in play and physical education activities. Educators agree that from the point of view of evaluating and adapting a curriculum, student needs must be met. Dewey (3, p. 95) makes this statement confirming the necessity of interest as a means in the educative process:

Interest, the identification of mind with the material and methods of a developing activity, as an inevitable result of the presence of situations. Hence it follows that little can be accomplished by setting up "interest" as an end or a method by itself. Interest is obtained not by thinking about it and aiming at it, but by considering and aiming at the conditions that lie back of it, and compel it. If we can discover a child's urgent needs and powers, and if we can supply an environment of materials, appliances and resources -- physical, social and intellectual -- to direct their adequate operation, we shall not have to think about interest.

This statement is applicable to this study in that background of students in physical education activities is a conditional factor which arouses interest.

Authorities (3, 15, 18) generally agree that much additional study and information concerning student interests is a necessary part of accurately determining students needs.

La Porte's study (9, p. 7) to determining a national curriculum in physical education points out some of the difficulties which have handicapped child interest studies as a means of determining student needs:
The influence of other factors on interest was noted. Age was found to be a major factor in modifying interest. Location and season seemed to have relatively little effect. While there might be some justification for teaching sports in season there may be equally good for putting them at other times in the school year. Experience proved to be a very strong factor in determining whether an activity was liked or disliked. Facilities seemed to have little bearing alone on interest. Tradition seemed to have very little appreciable effect, while publicity was quite significant.

The Beise Study

Dorothy Beise conducted this study in the department of physical education for women, at the University of Michigan in 1932-34. The study concerns itself with "The physical education background of college students as a factor in determining the content of the required physical education program."

The study was divided into three parts: First, a determination of actual physical education experience of students in supervised and non-supervised activities during the high school period; Second, a determination of the interests of students in physical education activities at the time of entrance into the University; and Third, a self-rating by the student of her skill in various physical education activities.

Information for the three parts of the study, of which only the first two will be discussed here, was obtained by means of the group interview and questionnaire method.

A brief description and analysis of data as established by the study in Part I, is as follows:

(1) An analysis of data shows that 68.1 percent of the freshman women came from class "A" schools, (700 and up), 18.1 percent class "B" (300 - 699), 9.9 percent from class "C" (100 - 299), and 3.9
percent from class "D" (less than 100). This classification was based on the Michigan Bureau of attended high schools.

(2) Further analysis as to the high school physical education time requirement was made in table 2. There were 117 and 34.4 percent of the entering freshmen women who came from a high school having a physical education requirement of one period a week for four years.

(3) Further investigation revealed that while some students did not fulfill the requirement as set up by their high schools, others exceeded it. According to table 3, a total of 51 students failed to complete their physical education requirements. Reasons for this were not given.

However, the number of students who failed to fulfill physical education requirements is greater than the number who exceeded it.

(4) The importance of knowing the specific activities which were included in the playing period or experience in physical education was recognized in this study. The students statement of experience in specific physical education activities was accepted as an indication of the general content of physical education programs in the various schools represented. An analysis of table 5 clearly indicated the emphasis placed on team games in the high schools. Except for gymnastics and swimming practically no individual sports received emphasis.

Further analysis of playing experience indicates the number of different activities in which the students participated.

Again marked difference appeared as to the type of activities which received emphasis in this group. Sixteen percent had not participated in any team sport where as 32.2 percent had not participated
in any individual sport and 49.7 percent of the group had no experience in rhythmic activities.

Further analysis clearly indicated that team sports as "Out of school" past times are not popular with girls of this age (freshmen).

A picture of the specific games played outside of school during high school years is presented in table 8 (1, p. 46).

<table>
<thead>
<tr>
<th>TEAM GAMES</th>
<th>No.</th>
<th>Percent</th>
</tr>
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<tbody>
<tr>
<td>Baseball</td>
<td>84</td>
<td>24.4</td>
</tr>
<tr>
<td>Basketball</td>
<td>51</td>
<td>14.8</td>
</tr>
<tr>
<td>Fieldball</td>
<td>6</td>
<td>1.7</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>18</td>
<td>5.2</td>
</tr>
<tr>
<td>Soccer</td>
<td>14</td>
<td>4.0</td>
</tr>
<tr>
<td>Archery</td>
<td>51</td>
<td>14.8</td>
</tr>
<tr>
<td>Bowling</td>
<td>24</td>
<td>6.9</td>
</tr>
<tr>
<td>Fencing</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>Golf</td>
<td>102</td>
<td>20.6</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>12</td>
<td>3.4</td>
</tr>
<tr>
<td>Riding</td>
<td>111</td>
<td>32.2</td>
</tr>
<tr>
<td>Swimming</td>
<td>252</td>
<td>73.2</td>
</tr>
<tr>
<td>Tennis</td>
<td>225</td>
<td>65.4</td>
</tr>
<tr>
<td>Volleyball</td>
<td>34</td>
<td>2.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RHYTHMS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Folk Dancing</td>
<td>13</td>
<td>3.7</td>
</tr>
<tr>
<td>Rhythms</td>
<td>30</td>
<td>8.7</td>
</tr>
<tr>
<td>Tap Dancing</td>
<td>40</td>
<td>11.6</td>
</tr>
</tbody>
</table>

Summary of Part I (1, p. 46)

(1) Of 282 freshmen women entering the University of Michigan in the fall of 1932, 68.9 percent attended class "A" schools while a total of 86.2 percent attended class "A" or "B" high schools.
(2) The average amount of physical education with which the average freshman woman entered the University was equivalent to two years, three times per week.

(3) From an analysis of student playing experience it is apparent that the major emphasis in physical education was placed in group games, with little emphasis on individual and dual activities.

(4) There appeared to be very little carry-over from activities taught in high school physical education period to the "out of school" activities (1, p. 46).

Part II (1, p. 47)

Beise's study concerns itself with the physical education interests of women students entering college.

The first five sports which were ranked in order of preference include both team and individual activities. However, individual sports were predominate. Table 9 (1, p. 47) gives the activities ranked in order of interest.

Table 9. Activities ranked in order of interests by 344 freshman women at the University of Michigan.

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Activity</th>
<th>No.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Swimming</td>
<td>225</td>
<td>64.8</td>
</tr>
<tr>
<td>2</td>
<td>Tennis</td>
<td>189</td>
<td>54.9</td>
</tr>
<tr>
<td>3</td>
<td>Basketball</td>
<td>107</td>
<td>31.1</td>
</tr>
<tr>
<td>4</td>
<td>Riding</td>
<td>94</td>
<td>27.3</td>
</tr>
<tr>
<td>5</td>
<td>Golf</td>
<td>67</td>
<td>19.4</td>
</tr>
<tr>
<td>6</td>
<td>Tap Dancing</td>
<td>54</td>
<td>16.7</td>
</tr>
<tr>
<td>7</td>
<td>Field Hockey</td>
<td>54</td>
<td>16.7</td>
</tr>
<tr>
<td>8</td>
<td>Baseball</td>
<td>43</td>
<td>12.5</td>
</tr>
<tr>
<td>9</td>
<td>Archery</td>
<td>42</td>
<td>12.2</td>
</tr>
<tr>
<td>10</td>
<td>Volleyball</td>
<td>32</td>
<td>9.4</td>
</tr>
<tr>
<td>12</td>
<td>Soccer</td>
<td>20</td>
<td>5.8</td>
</tr>
<tr>
<td>12</td>
<td>Rhythms</td>
<td>20</td>
<td>5.8</td>
</tr>
<tr>
<td>12</td>
<td>Folk Dancing</td>
<td>20</td>
<td>5.8</td>
</tr>
<tr>
<td>14</td>
<td>Bowling</td>
<td>14</td>
<td>4.0</td>
</tr>
<tr>
<td>15 1/2</td>
<td>Fencing</td>
<td>6</td>
<td>1.7</td>
</tr>
<tr>
<td>15 1/2</td>
<td>Gymnastics</td>
<td>6</td>
<td>1.7</td>
</tr>
<tr>
<td>17</td>
<td>Fieldball</td>
<td>1</td>
<td>.2</td>
</tr>
</tbody>
</table>
Summary of Part II (1, p. 48)

(1) Playing interests of this group are varied. However, swimming, tennis, basketball, golf and riding are the five best liked activities.

(2) High school physical education programs offer only infrequently the opportunity to become familiar with activities mentioned with the exception of basketball. As a result, the scope of the college physical education program must become very broad. The conclusions of the study of 347 freshmen women entering the University of Michigan in 1932 gives evidence that:

(1) In constructing a well rounded physical education program, many enlightening and valuable suggestions can rather quickly be brought forth by an analysis of the playing experience of a girl through the use of the interview questionnaire as used here.

(2) The high school physical education program are not yet completely fulfilling the needs and desires of the girls. As a result the college curriculum must be broad and varied.

The Clevett Study

Using the questionnaire method, Clevett (2) in 1934 made a study of "The Interests and Participation of Boys in Voluntary Physical Education Activities." Clevett undertook the study with the thought that physical education is concerned not only with the planning and directing programs for children in and out of school, but it is also studying the changing interests of participants. He also maintained there should be more utilization of interest as one of the guides to program building.
The study herein discussed has been directed toward a better understanding of the interests of boys in voluntary programs of physical education. With this in mind, Clevett set out to answer the following problems:

1. What specific physical education activities do Y. M. C. A. boys ten to seventeen years of age like and in which do they participate?
2. What specific physical education activities and what types of activities do boys prefer and in which do they participate most frequently?
3. Do stronger and heavier boys prefer more vigorous activities than do boys who are not so strong, or who are of a more slender body build?
4. Do boys like the activities which physical educators consider to be the most valuable for the all-round development of boys of specific ages?
5. What is the relationship, if any, between the activities which boys say they like, or prefer, and the activities in which they say they participate?

The questionnaire (interest finder) was used in the study. It was prepared after a brief survey of the major activities in the department of physical education of seven Y. M. C. A. Sixty-seven activities were included in the interest finder.

Twenty-three directors of physical education, located in seven states, assisted in the study. The boys who checked the interest finders were a random sampling of the membership of the institutions,
and ranged in ages from 10 to 17 years. A general summary of the study follows (2, p. 35).

(1) The following activities are liked and preferred by the Y. M. C. A. boys of this study: basketball, hand baseball, swimming, football, volley ball, tennis, softball, running races, skating and soccer.

(2) Interest in social dancing, tennis, golf, and life saving seems to accompany the approach of physical maturity.

(3) Tennis and informal swimming are activities which may be carried on for recreational purposes throughout life, and it may be a recognition of these recreational values that accounts in part for the increasing interest with increasing chronological age.

(4) Activities such as golf and tennis, in which speed and accuracy are important factors, are found to be more popular with the older boys.

(5) Interest and participation in football, basketball, and baseball continue over a longer period of years than in soccer.

(6) From 61 to 65 percent of all preferences and participation of the three physical maturity groups can be accounted for in four activities: basketball, baseball, swimming and football.

(7) The ten activities named in paragraph one of this general summary constitutes from 85 to 92 percent of the total preferences and at least 85 percent of the total participation of the three major groups.
(8) One of the significant findings of this study is related to the relationship between interest and participation. Interest far exceeds participation, but when placed in rank order, participation occasionally exceeds the preferences.

(9) Generally, boys do not prefer activities because of the differences in physical strength at any given age level.

(10) The findings of this study indicate that boys like the activities which leaders in physical education think are most valuable for the all-round development of the boys.

(11) The term preference as used in this study is probably a better indication of interest than the term like. The number of activities said to be liked by the boys was much larger than the number of activities preferred. This implies a greater degree of selection in preferences. It would seem, then, that individuals who have the responsibilities for program planning in physical education should recognize these differences, particularly if interest as such is a criterion.

Downs' Study

A study (4) recently completed by Miss Lois Downs of 308 freshmen girls at the Utah State Agricultural College, entitled An Evaluation of the High School Physical Education Program of Girls at the Utah State Agricultural College in 1968, in Light of Selected Basic Standards of Physical Education, is of special interest to this study since it deals with the physical education and interest of 308 freshmen girls in physical education activities.

Miss Downs evaluated the high school physical education program of 308 freshmen girls at the Utah State Agricultural College by scoring
each girl's participation as to the number and types of physical education activities participated in as a part of her high school physical education program, and comparing these scores with scores based upon selected basic standards in physical education. Downs also scored the interest of each girl in each activity and compared these scores with scores made in participation.

Realizing that the amount of time on the activity and that various other factors were important in an analysis of the activity program, Miss Downs set up the following scoring system for sports (4, p. 12).

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had class in high school</td>
<td>5</td>
</tr>
<tr>
<td>Played on non-school basis</td>
<td>3</td>
</tr>
<tr>
<td>Know and can play sport</td>
<td>1</td>
</tr>
<tr>
<td>Cannot play the sport</td>
<td>0</td>
</tr>
</tbody>
</table>

Miss Downs suggested that any standard program should include six groups of activities (1) aquatics, (2) dance, (3) rhythmics, (4) individual, (5) team and (6) mental games, and of these sports in each group as a minimum essential for a well-rounded program.

On the basis of the Downs' study the following findings having pertinent implications to this study are as follows (4, p. 40):

(1) Many students are matriculating in the high schools without having physical examinations.

(2) An analysis of material on physical examinations by a medical doctor reveals that 70 students or 23 percent received physical examinations before participating in the physical education program.
(3) Forty-five percent of the students in this study were not required to take a physical examination before participating in the physical education program.

(4) Analysis of the data on the number of years that physical education was taken while in high school showed that 48 percent of the students were below the suggested standard of enrollment in physical education each year while in high school.

(5) In general, the students represented in this study have had physical education activities largely in the team sports division. It seems that the program has been concentrated around a few sports in the team-sport division.

(6) Using 14 participation points as a minimum standard, all six of the study divisions showed a need for increased program offering as the mean score in all divisions was below the suggested minimum standard.

Table 16. Other division scores in order. *(4, p. 43)*

<table>
<thead>
<tr>
<th>Division</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhythms - Gymnastics</td>
<td>9.42</td>
</tr>
<tr>
<td>Outing Activities</td>
<td>7.6</td>
</tr>
<tr>
<td>Individual Activities</td>
<td>5.17</td>
</tr>
<tr>
<td>Mental Games</td>
<td>4.5</td>
</tr>
<tr>
<td>Aquatics</td>
<td>3.2</td>
</tr>
</tbody>
</table>
Table 17. Interest mean scores for the various divisions (4, p. 43)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual activities</td>
<td>12.3</td>
</tr>
<tr>
<td>Outing activities</td>
<td>11.5</td>
</tr>
<tr>
<td>Dance Rhythms</td>
<td>11.3</td>
</tr>
<tr>
<td>Aquatics</td>
<td>7.6</td>
</tr>
<tr>
<td>Team Games</td>
<td>5.4</td>
</tr>
<tr>
<td>Mental Games</td>
<td>4.49</td>
</tr>
</tbody>
</table>

The Tolman Study

Closely related to the subject of this thesis is a study conducted by Tolman (14). This study concerned itself with the Experiences, Interests, Desires and a Self-rating of skills in physical education activities of 106 freshman men students at the Mesa Junior College, Grand Junction, Colorado in the year 1948. This is the most recent study dealing with the background experiences and interest of students in physical education activities that the writer was able to find.

The group questionnaire technique was used and a series of tables was devised for presenting and analysing the data. The study was broken down into three parts, each part concerning itself with a different element of the study. These parts briefly discussed are as follows:

Part I presented a general history of the 108 students included in the study. This general history concerned itself with the physical education requirements and the health requirements of each student during the high school years.
Part II deals with the experiences of the 106 students in physical education activities while attending high school under supervised instruction and participation in physical education activities outside of the school. All activities considered pertinent to the locality were selected and each student was asked to indicate whether his experience in the activities came from the supervised school program or outside of the school, such as religious organizations, Y. M. C. A., city recreation, etc.

Part III of the study showed the interests and desires of the student in physical education activities. Again each student was asked to indicate his interest, and desires for participation and instruction in the physical education activities selected. The activities were the same as those used in Part II.

Table 13 (14, p. 56) shows the relative rankings of 25 physical education activities participated in most by the 106 students in the study. The activities are ranked as to participation, interest and desires for participation in college, and self-rating of skills.

Conclusions of the Tolman study. The conclusions and recommendations, based on the study are presented as follows:

1. The majority of students in this study did not take as much physical education in high school as they should have taken. Based on the standards recommended by leading authorities, the participation in physical education classes during four years of high school of the 106 students was only 26.3 percent of what it should have been.

2. Thirty-four percent of the students in this study did not have a physical (health) examination during four years of high school.
The average number of physical examinations for each of the 106 students was 1.7. This is considerably below the minimum standard of a physical examination for each year the student is in high school.

(3) Basketball is the physical education activity participated in most by students in this study under high school supervision during the four years of high school. The next nine physical education activities, listed in order of participation are: softball, football, touch football, volleyball, baseball, track and field, tumbling, wrestling, and boxing.

(4) Most of the participation in physical education activities by students in this study which came under the supervision of the high schools was in team sports.

(5) The ten physical education activities participated in most by students in this study, not under high school supervision, during the four years of high school are listed in order of participation as follows: hiking, fishing, basketball, camping, hunting, softball, swimming, social dancing, horseback riding, and baseball.

(6) Outing activities constitute the group of activities participated in most by students in this study, not under high school supervision, during high school years.

(7) Basketball is the activity participated in most by the students in this study during high school years. The next nine activities, in order of participation, are listed: softball, hiking, baseball, football, touch football, fishing, camping, hunting, and swimming.
(8) The ten physical education activities scored highest in interest by the students in this study in order of interest are: basketball, hunting, fishing, camping, softball, hiking, football, horseback riding, swimming, and riflery.

(9) The ten physical education activities said to be preferred by the largest number of students in this study, in order of preference are: basketball, hunting, baseball, football, fishing, riflery, swimming, camping, hiking and softball.

(10) In total interest, the students in this study make the highest average interest scores in outing activities, with team sports second, and gymnastics third.

(11) The ten physical education activities the student in this study desires to participate in most in college, in order of desire, are: basketball, swimming, hunting, softball, bowling, riflery, hiking, baseball, tennis and skiing.

(12) The ten physical education activities the students in this study desire instruction in college, in order of desire, are: basketball, swimming, tennis, bowling, skiing, riflery, softball, football, and diving.

(13) The desire for participation in outing activities, team sports, and individual sports in college of the students in this study is much greater than their desire for instruction.

(14) The ten activities in which the students in this study rated themselves as being best skilled, in order of skill, are: basketball, softball, hunting, hiking, swimming, fishing, camping, baseball, football, and touch football.
(15) The largest number of the students in this study think they are best skilled in outing activities and team sports; the lowest number in gymnastics and rhythms.

(16) Gymnastics and rhythms compose the activities in which the largest number of students in this study have never participated.

(17) Team sports and outing activities comprise the physical education activities the largest number of students in this study think they are fairly well and well skilled in.

(18) Basketball is the physical education activity ranked highest by the students in this study in participation, interest, desire for participation in college, desire for instruction in college, and a self-rating of skills.

(19) The team sports, softball, baseball, football, and touch football rate lower in interest by the students in this study than they do in participation.

(20) With the exception of hiking, the outing activities are rated much higher in interest than in participation by the students in this study.

In a further effort to collect additional information regarding background studies in physical education, letters were written to William Ralph La Porte, Head of the Department of Physical Education, University of Southern California, E. C. Davis, Head of the Department of Health, University of Southern California and Jesse Feiring Williams, retired, Carmel, California. All men indicated they were interested in background studies of physical education students but had published nothing on the subject. However, Jesse Feiring Williams
made this comment appropriate to this study:

A knowledge of a freshman's background and current interests could have a marked effect on the physical education program. Whether or not this data would alter the curriculum depends upon many factors, but in all colleges with adequate staff and facilities such information should have a ready response to the curriculum.
METHOD OF PROCEDURE

The information for this study was secured at the required entrance physical examination for all freshmen students at the Utah State Agricultural College beginning the 1950-51 school year. The normative survey method involving the questionnaire technique was used.

The questionnaire (see appendix) formulated for use in this study was first submitted to the critical analysis of twenty graduate students in the Department of Physical Education at the Utah State Agricultural College and to all the professors of the writers' advisory committee. From the suggestions and recommendations of these people, revisions were made and a revised questionnaire was made. This revised questionnaire was circulated again among graduate students and professors at the Utah State Agricultural College for final suggestions and recommendations. For further assurance that the questionnaire would be clear and understood by all students it was given to ten high school graduates. The writer was also able to ascertain the approximate time required to administer the questionnaire. The questionnaire administered to the group of high school students appeared to be satisfactory. It was then mimeographed in final form.

The questionnaire, as used in this study, was given to each boy as he presented himself for his physical examination. A standard set of directions was given to each student. The writer and four informed assistants, one at each station, gave a full explanation to all instructions on the questionnaire and was available to answer any question concerning the information desired. At the final
physical examination station, each questionnaire was checked to see if all columns and sections had been completed. In several cases, students were asked to complete parts of their questionnaire which had either been omitted, or obviously, erroneously checked.

A master form was constructed for grouping all of the elements of data essential to the study. The information contained in each of the questions was then tabulated on the master form for the purposes of analysis.

Many of the ideas and techniques used in the construction of the questionnaire for this study were taken from the Beise (1), Clevett (2), Tolman (14), Wayman (18) studies, and from the suggestions of numerous others in physical education and education.

The greatest problem in the construction of the questionnaire used in this study was in determining what constitutes physical education background, and in drawing an adequate system for checking, measuring, and scoring the activities determined as constituting physical education background.

The basis for determining the activities included in this study, and the various techniques employed in measuring and the scoring physical education background, current interests, and a self-rating of skills in these activities, will be presented in the order in which they are analyzed in the study.

Physical education classes

Authorities (5, 7, 10, 16) agree that the majority of the individuals' physical education background in activities is contributed by the physical education classes of the high school physical education program. Authorities further agree that the
standard of participation in physical education classes should be one year for each year the student is in high school. Further, participation in physical classes should be daily for periods of forty to sixty minutes. This is further emphasized by La Porte in this comment (10, p. 47).

Class instruction should be on the basis of a daily period, if possible. Most progressive states today require a minimum of twenty minutes a day in class instruction for elementary schools and the equivalent of one period per day of from forty to sixty minutes each, in the secondary schools.

Physical examinations

Authorities (7, 10, 16) agree that a health examination should be provided and required of every student at least once in each school level and if possible, it should be given annually. The requirement of a yearly physical examination each year the student is in high school is the minimum acceptable standard. La Porte emphasizes the importance of the physical examination by stating (10, p. 47):

No student should be permitted to participate in strenuous activities, either in class or on athletic squads under the supervision of the school without such prior health examination.

A typical expression of the importance of the physical examination in the physical education background of the student is quoted from Voltmer and Esslinger (17, p. 62):

A periodical health examination is the very foundation of the entire health program...By determining the health status of every student, the health examination may be used as the basis on which to plan a student's curricular and extra-curricular activities.

The physical examination should only be administered by qualified personnel. Again, quoting from Voltmer and Esslinger (17, p. 163):
Qualified physicians, dentists, psychiatrists, and nurses should give the examination, although the faculty or reliable students may assist with some of the routine details, such as weighing and measuring.

**Background areas of participation**

Two broad areas of participation must be considered in this study:

1. participation under supervision of the high school, both curricular and extra-curricular, and
2. participation not under the supervision of the high school authorities, both supervised and non-supervised.

The participation in physical education activities under high school supervision can be classified under three main groups, namely:

1. physical education classes,
2. intramural activities, and
3. athletics.

Physical education classes have been discussed, so will not be given any further consideration.

The high school physical education program establishes intramural activities as a laboratory period for displaying and developing skills taught in physical education classes and as such is an important division of participation in the physical education activities of the high school.

The third group for participation under high school supervision is athletics. Although, athletics are not considered as a part of the high school physical education program, it must be considered because it constitutes an important area of participation in determining the individual's background.

Areas of participation outside of the high school and not directly under their supervision are difficult to sub-divide. Religious groups,
clubs, Y. M. C. A.'s, and city recreational programs all promote supervised participation in sports. However, the greatest participation in physical education activities not under high school supervision is during the summer months in the form of non-supervised sports and outing activities.

The writer realizes it would be most difficult to construct a questionnaire that would adequately check participation in all non-supervised areas.

In view of these facts, the writer used a method of checking and scoring participation in physical education activities, not under high school supervision, that had been established in the Tolman study (14). The method consisted of checking each activity as:

1. most participation, 2. some participation, i.e., participation in quite a lot but not most, and 3. very little participation, i.e., occasional participation. The participation checked in this manner was then weighted and scored as follows:

<table>
<thead>
<tr>
<th>Level of Participation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very little</td>
<td>1 pt.</td>
</tr>
<tr>
<td>Some</td>
<td>2 pts.</td>
</tr>
<tr>
<td>Most</td>
<td>3 pts.</td>
</tr>
</tbody>
</table>

The maximum a student could score in participation in any one physical education activity, not under high school supervision, was three points.

The participation of each student in activities under high school supervision was scored as:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in physical education classes</td>
<td>1 pt.</td>
</tr>
<tr>
<td>Participation in intramurals</td>
<td>1 pt.</td>
</tr>
<tr>
<td>Participation in athletics</td>
<td>1 pt.</td>
</tr>
</tbody>
</table>
On this basis the maximum a student could score in any one activity under high school supervision was three points.

Using the combined scoring systems for both out of high school activities and high school supervised activities, the maximum a student could score in any one physical education activity in total participation was six points.

Activities and activity group selection

Most authorities of physical education agree as to which activities constitute physical education activities, and upon the individual classification of these activities into groups.

Based on nineteen years of research by the committee on curriculum research of the College Physical Education Association and assistance of hundreds of representative physical education supervisors throughout the United States, La Porte (10, p. 31) as chairman of this committee suggests the following activities for the high school physical education program:

- basketball
- gymnastic apparatus
- field hockey
- rhythms
- soccer
- speedball
- softball
- swimming
- diving
- life saving
- touch football
- track and field
- tumbling
- pyramids
- volleyball
- archery
- badminton
- boating
- bowling
- camping
- fencing
- folk dancing
- golf
- handball
- baseball
- hiking
- horseshoes
- riding
- skating
- skiing
- snowshoeing
- social dancing
- social games
- squash
- table tennis
- tennis
- water polo
- wrestling

Irwin adds the following to this list of physical education activities (7, p. 196):
bicycling  individual gymnastics  rifle shooting
canoeing  ping pong  recreational games
cross-country  shuffleboard  folk dancing
football  field ball  clog and tap dancing
lacrosse  deck tennis  character dancing
ice hockey  dancing  modern dancing
natural gymnastics

Irwin further classifies physical education activities into activity groups (7, p. 183):

- apparatus
- aquatics
- formal activities
- games and relays
- higher organized sports

- recreational sports
- rhythms and dancing
- tumbling
- winter sports

Staley lists the major divisional groups in sports as (13, p. 63):

- dances
- athletic games
- combatives
- acrobatic stunts
- aquatics
- winter sports
- relay races
- individual athletics
- outing activities
- horseback riding
- marksmanship
- miscellaneous

The Utah State Course of Study shows the following classification of physical education activities (16, p. 11):

- athletic activities
- combatives
- rhythms
- formalized activities
- outing and related activities
- aquatics
- winter sports
- self-testing activities

From these activities and several other lists and classification of physical education activities, a final list of 52 activities divided into seven divisions or groups were selected (see appendix).

Interests

In constructing a questionnaire which would provide the necessary data to adequately measure interest, studies by Clevett (2) and Beise (1) were very helpful. Each study presented activities liked and those activities preferred.
Wayman (18) suggested a habit-interest-activity questionnaire be administered to every freshman matriculating in college. This questionnaire could be used to give the college physical education department some idea of the secondary school background, interests and habits of the students in physical education activities.

The writer used a method for scoring the interest of each student in each physical education activity that was developed by Tolman (14). This method is based upon relative degrees of interest, and divides each activity into five classifications. These classifications and scoring system are as follows (14, p. 22):

- Dislike the activity • • • • • • • • • • • 1 pt.
- Not acquainted with the activity • • • • • • • 2 pts.
- Indifferent or neutral about activity • • • • • 3 pts.
- Like the activity • • • • • • • • • • • 4 pts.
- Prefer the activity • • • • • • • • • • • 5 pts.

Using this scale, the maximum a student could score in interest in any one physical education activity is five points, and the minimum, one point.

**Participation and instruction in activities**

Authorities in physical education suggest that individual needs of all students should be adequately met, but in order to meet these needs they must first be determined.

With this in mind, the section of the study dealing with the students' desire for participation and instruction in physical education activities in college was included.

No special scoring technique was used for this part of the study. The number of students that would like participation and the number that would like instruction in physical education
activities will be totaled for each activity and used in the analysis of material.

**Individual's self-rating of skills**

In the third study conducted by Dorothy Biese at the University of Michigan, she concluded that the students' self-rating of their skills are of value in understanding the basis of sports interests and that knowledge of self-ratings in various sports also help to determine the emphasis which the development of skills should have in our physical education program.

This section dealing with the students' self-rating of their skills was included to determine the relationship which exists among participation, interest and the degree of skill in physical education activities.

The procedure used for measuring and scoring a self-rating of each students' skills in each activity was partly adopted from the Tolman study (14) which is as follows:

- Activities you have never tried . . . . . . . . . . 1 pt.
- Activities you have tried . . . . . . . . . . 2 pts.
- Activities you think you can do fairly well . . . . . 3 pts.
- Activities you think you can do well . . . . . . . 4 pts.
- Activities you excel in . . . . . . . . . . 5 pts.

Students were instructed to base their judgement of how well they could perform in an activity as their performance relative to the performance of other students in their school.

Based upon this method of scoring self-rated skills, a student could not score more than five points, in any single physical education activity.
**ANALYSIS OF DATA**

Table 1. A distribution of the 528 students in the study by states where they attended high school.

<table>
<thead>
<tr>
<th>States</th>
<th>Number of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utah</td>
<td>290</td>
<td>54.9</td>
</tr>
<tr>
<td>Idaho</td>
<td>93</td>
<td>17.6</td>
</tr>
<tr>
<td>Other states</td>
<td>145</td>
<td>27.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>528</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 1 shows that of the 528 students in the study, 290 or 54.9 percent, came from Utah, 93 or 17.6 percent from Idaho and 145 or 27.5 percent from other states. This figure includes 8 students from Canada, 1 from China and 1 from Lebanon.

Table 2. A distribution of the 528 students in the study as to the enrollment of the high school from which they graduated.

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>Number of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 149</td>
<td>60</td>
<td>11.4</td>
</tr>
<tr>
<td>150 - 229</td>
<td>65</td>
<td>12.3</td>
</tr>
<tr>
<td>300 - 599</td>
<td>147</td>
<td>27.7</td>
</tr>
<tr>
<td>600 - 999</td>
<td>129</td>
<td>24.5</td>
</tr>
<tr>
<td>1000 and above</td>
<td>127</td>
<td>24.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>528</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 2 shows that of the 528 students included in the study, 60, or 11.4 percent, came from high schools of less than 150 enrollment; while 127, or 24.1 percent, came from high schools with an enrollment of 1000 or more.

Table 3. A distribution of the 528 students as to the number of years physical education was required and the number of years physical education was actually taken in high school.

<table>
<thead>
<tr>
<th>No. Years</th>
<th>Required P.E.</th>
<th>Taking P.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Students</td>
<td>Percent</td>
</tr>
<tr>
<td>0</td>
<td>44</td>
<td>8.3</td>
</tr>
<tr>
<td>1</td>
<td>54</td>
<td>10.2</td>
</tr>
<tr>
<td>2</td>
<td>174</td>
<td>33.0</td>
</tr>
<tr>
<td>3</td>
<td>113</td>
<td>21.4</td>
</tr>
<tr>
<td>4</td>
<td>143</td>
<td>27.1</td>
</tr>
<tr>
<td>Total</td>
<td>528</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3 is an analysis of the number of years physical education was required, and the number of years it was actually taken in high school.

Forty-four students or 8.3 percent were not required to take physical education in high school; whereas 33.0 percent were required to take physical education two years, and 27.1 percent four years.

Compared with the number required to take physical education in high school 15, or 2.9 percent actually took no physical education in high school; whereas 21 percent took physical education two years and 49.6 percent four years.
Further analysis shows that 484 students were required to take physical education a total of 1313 years for an average of 2.7 years per student. Five hundred and thirteen actually took physical education; a total of 1602 years for an average of 3.1 years per student. On a basis of the 528 students included in the study, the average number of years physical education required was 2.5 years per student; while the average number of years taken was 3.

The State of Utah has published a state course of study in health and physical education. The standards for health and physical education as adopted by the course of study require a daily period of directed health and physical education in grades 7, 8, 9 and in two of the three years of senior high school.

Since this study is based on the four year high school plan, the 9th grade must be included as a part of the senior high school. Many high schools in Utah operate on a three year plan.

Authorities (7, 10) in physical education recommend one year of physical education for each year in high school.

Compared with this standard, the students in this study have received only three-fourths the number of years of physical education they should have had. However, on an average they have met the requirements as set forth by the present Utah state course of study.
Table 4. A distribution of the 528 students as to the number of periods per week in physical education classes.

<table>
<thead>
<tr>
<th>Periods Per Week</th>
<th>Number of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
<td>2.9</td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>1.7</td>
</tr>
<tr>
<td>2</td>
<td>43</td>
<td>8.2</td>
</tr>
<tr>
<td>3</td>
<td>112</td>
<td>21.2</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>3.8</td>
</tr>
<tr>
<td>5</td>
<td>329</td>
<td>62.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>528</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4 is an analysis of the number of periods per week physical education classes were taken.

Only 15 students, or 2.9 percent, did not take physical education. One hundred and twelve, or 21.2 percent, took three periods, and 329, or 62.2 percent, took five periods of physical education per week.

The average number of periods per week for the 528 students was 4.1.

Authorities in physical education recommend that five periods a week be taught in physical education.

Table 5. A distribution of the 528 students in the study as to the length of physical education class periods.

<table>
<thead>
<tr>
<th>P. E. Class Periods (minutes)</th>
<th>Number of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>15</td>
<td>2.9</td>
</tr>
<tr>
<td>35 or less</td>
<td>3</td>
<td>.6</td>
</tr>
<tr>
<td>36 - 45</td>
<td>68</td>
<td>12.9</td>
</tr>
<tr>
<td>46 - 55</td>
<td>205</td>
<td>38.8</td>
</tr>
<tr>
<td>56 and above</td>
<td>237</td>
<td>45.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>528</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 5 is an analysis of the length of physical education class periods of 528 students.

Fifteen students, or 2.9 percent, did not take physical education. Two hundred and five students or 38.8 percent, took physical education classes of 46 - 55 minutes duration; whereas 237, or 45.1 percent, took classes of 56 minutes or longer.

Using the median of 30, 40, 50, and 60 minutes respectively, for each of the time intervals listed in table 5, the average length of classes in physical education for the 513 students who actually took physical education was 53 minutes. The average for the 528 students was 52 minutes.

Standards for the length of physical education class periods recommended by authorities in physical education vary between a minimum of forty and a maximum of sixty minutes.

Using the data analyzed from tables 3, 4 and 5, it was found that the total average time of the 528 students in physical education classes was three years, 4.2 periods per week for an average of 52 minutes per period. Computed on a basis of 36 weeks in the school year, the average participation time of each of the 528 students in high school was 453.6 periods of 52 minutes for a total of 23,587 minutes.

Again using the standards for physical education recommended by authorities as a basis of computation, it was found that the 528 students should have participated in physical education classes an average of 720 periods of forty to sixty minutes each.

Based on this data, the time spent in physical education classes
in high school of the 528 students was only 63 percent of what it should have been.

Table 6. Number of freshmen boys who received credit for physical education in high school.

<table>
<thead>
<tr>
<th>Credit</th>
<th>Number of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>495</td>
<td>93.75</td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>6.25</td>
</tr>
<tr>
<td>Total</td>
<td>528</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 6 shows that of the 528 students 495, or 93.75 percent, received credit for physical education in high school; whereas 33, or 6.25 percent, did not receive credit.

Table 7. A distribution of the 528 students who received co-recreational periods or activities in physical education.

<table>
<thead>
<tr>
<th>Co-recreational Period</th>
<th>Number of Students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>207</td>
<td>39.2</td>
</tr>
<tr>
<td>No</td>
<td>321</td>
<td>60.8</td>
</tr>
<tr>
<td>Total</td>
<td>528</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 7 shows that of the 528 students in the study, 207, or 39.2 percent, received some co-recreational or co-educational periods of instruction. While, 321, or 60.8 percent, did not receive any co-recreational training.

Authorities (10, 11) agree that since boys and girls must play and work together, not only in adolescence, but throughout life, it is quite natural and logical that the opportunity for such training
should be given them in recreational activities, and the logical place for the majority of such training is in the physical education classes.

Table 8. A distribution of the 528 students as to the number of physical examinations (by medical doctor) received during high school.

<table>
<thead>
<tr>
<th>Number of physical examinations</th>
<th>Number of students</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>72</td>
<td>13.6</td>
</tr>
<tr>
<td>1</td>
<td>80</td>
<td>15.2</td>
</tr>
<tr>
<td>2</td>
<td>110</td>
<td>20.8</td>
</tr>
<tr>
<td>3</td>
<td>68</td>
<td>12.9</td>
</tr>
<tr>
<td>4</td>
<td>148</td>
<td>28.0</td>
</tr>
<tr>
<td>More than 4</td>
<td>50</td>
<td>9.5</td>
</tr>
<tr>
<td>Total</td>
<td>528</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Authorities are agreed that a minimum standard of one physical examination should be given each student at the beginning of each school years as an integral part of the school's health and physical education program. In addition, no student should be allowed to participate in an intramural sports program, or inter-school athletics without having received a physical examination by qualified personnel.

Table 8 is an analysis of the number of physical examinations received by the 528 students during high school.

Seventy-two, or 13.6 percent, did not receive a physical examination in high school. Twenty and eight tenths percent received two examinations, and 28.0 percent received four physical examinations.
The average number of physical examinations for the 528 students while in high school was 2.5.

No attempt was made to determine the number of physical examinations given in connection with athletics, or the number given as a requisite of the physical education program. The writer feels, however, that a considerable number of the physical examinations reported were administered as a part of the athletic programs, rather than the physical education programs of the schools.
Table 9. A distribution as to background of the 528 boys in twenty physical education activities participated in most under high school supervision.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Physical Ed. Classes</th>
<th>Intramurals</th>
<th>Athletics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>411</td>
<td>222</td>
<td>190</td>
<td>823</td>
</tr>
<tr>
<td>Softball</td>
<td>369</td>
<td>111</td>
<td>71</td>
<td>551</td>
</tr>
<tr>
<td>Touch Football</td>
<td>330</td>
<td>123</td>
<td>30</td>
<td>483</td>
</tr>
<tr>
<td>Track &amp; Field</td>
<td>210</td>
<td>51</td>
<td>202</td>
<td>463</td>
</tr>
<tr>
<td>Football</td>
<td>213</td>
<td>42</td>
<td>192</td>
<td>457</td>
</tr>
<tr>
<td>Volley Ball</td>
<td>333</td>
<td>105</td>
<td>19</td>
<td>457</td>
</tr>
<tr>
<td>Baseball</td>
<td>174</td>
<td>36</td>
<td>112</td>
<td>322</td>
</tr>
<tr>
<td>Tumbling</td>
<td>294</td>
<td>22</td>
<td>0</td>
<td>316</td>
</tr>
<tr>
<td>Swimming</td>
<td>150</td>
<td>54</td>
<td>34</td>
<td>238</td>
</tr>
<tr>
<td>Ping Pong</td>
<td>147</td>
<td>70</td>
<td>15</td>
<td>232</td>
</tr>
<tr>
<td>Boxing</td>
<td>156</td>
<td>16</td>
<td>42</td>
<td>214</td>
</tr>
<tr>
<td>Wrestling</td>
<td>141</td>
<td>37</td>
<td>31</td>
<td>209</td>
</tr>
<tr>
<td>Horseshoes</td>
<td>138</td>
<td>53</td>
<td>10</td>
<td>201</td>
</tr>
<tr>
<td>Tennis</td>
<td>111</td>
<td>35</td>
<td>40</td>
<td>186</td>
</tr>
<tr>
<td>Social Dance</td>
<td>156</td>
<td>6</td>
<td>0</td>
<td>162</td>
</tr>
<tr>
<td>Badminton</td>
<td>117</td>
<td>34</td>
<td>10</td>
<td>161</td>
</tr>
<tr>
<td>Soccer</td>
<td>129</td>
<td>18</td>
<td>10</td>
<td>157</td>
</tr>
<tr>
<td>Rope Climb</td>
<td>100</td>
<td>3</td>
<td>0</td>
<td>103</td>
</tr>
<tr>
<td>Diving</td>
<td>52</td>
<td>12</td>
<td>14</td>
<td>78</td>
</tr>
<tr>
<td>Pyramids</td>
<td>64</td>
<td>6</td>
<td>0</td>
<td>70</td>
</tr>
</tbody>
</table>
Table 9 is an analysis of the background experiences of the 528 physical education activities participated in most under high school supervision.

Basketball ranks at the top with high participation in physical education classes, intramurals, and athletics. Softball, touch football, track and field, football, volleyball, and baseball follow in the order named.

Track and field rank highest of the individual sports being fourth in the participation with a total of 463 points.

Tumbling leads the gymnastic activities, placing eighth with a total of 316 points, followed by boxing, the leader among the dual sports, in eleventh with a participation score of 214.

Swimming ranks highest in the aquatic group, placing ninth, with a score of 238 points. Diving also placed in the twenty activities, with the total of 78 points and nineteenth in rank.

Social dancing was the only rhythmic activity, placing fifteenth with a total participation score of 162. No outing and related activities placed in the twenty activities participated in most under high school supervision.
Table 10. A distribution of the background experiences of the 528 students in the twenty physical education activities participated in most not under high school supervision.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Participated Most PX3</th>
<th>Participated Some PX2</th>
<th>Participated Very little PX1</th>
<th>Total Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>204</td>
<td>202</td>
<td>35</td>
<td>1051</td>
</tr>
<tr>
<td>Camping</td>
<td>232</td>
<td>141</td>
<td>30</td>
<td>1008</td>
</tr>
<tr>
<td>Hunting</td>
<td>258</td>
<td>90</td>
<td>26</td>
<td>980</td>
</tr>
<tr>
<td>Swimming</td>
<td>180</td>
<td>192</td>
<td>34</td>
<td>958</td>
</tr>
<tr>
<td>Fishing</td>
<td>225</td>
<td>114</td>
<td>54</td>
<td>957</td>
</tr>
<tr>
<td>Hiking</td>
<td>210</td>
<td>149</td>
<td>21</td>
<td>949</td>
</tr>
<tr>
<td>Social dancing</td>
<td>188</td>
<td>133</td>
<td>24</td>
<td>854</td>
</tr>
<tr>
<td>Softball</td>
<td>136</td>
<td>189</td>
<td>68</td>
<td>854</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>146</td>
<td>100</td>
<td>75</td>
<td>713</td>
</tr>
<tr>
<td>Baseball</td>
<td>106</td>
<td>126</td>
<td>63</td>
<td>633</td>
</tr>
<tr>
<td>Ping Pong</td>
<td>78</td>
<td>162</td>
<td>48</td>
<td>606</td>
</tr>
<tr>
<td>Touch football</td>
<td>60</td>
<td>155</td>
<td>72</td>
<td>562</td>
</tr>
<tr>
<td>Skating</td>
<td>77</td>
<td>126</td>
<td>72</td>
<td>555</td>
</tr>
<tr>
<td>Football</td>
<td>78</td>
<td>94</td>
<td>94</td>
<td>516</td>
</tr>
<tr>
<td>Casting</td>
<td>107</td>
<td>68</td>
<td>32</td>
<td>489</td>
</tr>
<tr>
<td>Bowling</td>
<td>60</td>
<td>114</td>
<td>75</td>
<td>483</td>
</tr>
<tr>
<td>Skiing</td>
<td>76</td>
<td>100</td>
<td>50</td>
<td>479</td>
</tr>
<tr>
<td>Cycling</td>
<td>63</td>
<td>108</td>
<td>60</td>
<td>465</td>
</tr>
<tr>
<td>Diving</td>
<td>64</td>
<td>106</td>
<td>60</td>
<td>464</td>
</tr>
<tr>
<td>Boating</td>
<td>73</td>
<td>84</td>
<td>37</td>
<td>464</td>
</tr>
</tbody>
</table>

* Score weighted on the basis of: Most = 3, Some = 2, and Very Little = 1

Table 10 is an analysis of the participation of the 528 students in twenty physical education activities they participated in most not under high school supervision.

Basketball with a participation score of 1051, followed by camping with a score of 1008 leads the list of activities participated in most not under high school supervision.

Four outing activities, Camping, Hunting, Fishing and Hiking, rank among the first six activities participated in most not under high school supervision.

Basketball, softball, baseball, touch football and football
were the only team sports listed in the twenty activities.

Swimming and diving lead the aquatic activities placing fourth and nineteenth respectively.

Social dancing, in seventh place, was the only rhythmic activity to be listed in the twenty activities participated in most not under high school supervision.
Table 11. A distribution of the participation of the 528 students in the study in the twenty physical education activities participated in most during high school years.

<table>
<thead>
<tr>
<th>Activity</th>
<th>High School Supervised</th>
<th>Not High School Supervised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P. E. Classes</td>
<td>Intramurals</td>
</tr>
<tr>
<td>Basketball</td>
<td>411</td>
<td>222</td>
</tr>
<tr>
<td>Softball</td>
<td>369</td>
<td>111</td>
</tr>
<tr>
<td>Swimming</td>
<td>150</td>
<td>54</td>
</tr>
<tr>
<td>Touch football</td>
<td>330</td>
<td>123</td>
</tr>
<tr>
<td>Social Dance</td>
<td>156</td>
<td>6</td>
</tr>
<tr>
<td>Camping</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Hunting</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Football</td>
<td>213</td>
<td>42</td>
</tr>
<tr>
<td>Fishing</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Hiking</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Baseball</td>
<td>174</td>
<td>36</td>
</tr>
<tr>
<td>Ping Pong</td>
<td>147</td>
<td>70</td>
</tr>
<tr>
<td>Volleyball</td>
<td>333</td>
<td>105</td>
</tr>
<tr>
<td>Track &amp; field</td>
<td>210</td>
<td>51</td>
</tr>
<tr>
<td>Horseshoes</td>
<td>138</td>
<td>53</td>
</tr>
<tr>
<td>Horserback riding</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Skating</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>Tennis</td>
<td>111</td>
<td>35</td>
</tr>
<tr>
<td>Diving</td>
<td>52</td>
<td>54</td>
</tr>
<tr>
<td>Skiing</td>
<td>27</td>
<td>12</td>
</tr>
</tbody>
</table>

* Score weighted on a basis of: Most = 3, Some = 2, and all other = 1.
Table 11 is an analysis of the participation of the 528 students in the twenty physical education activities participated in most during high school years.

Basketball is the activity participated in most during high school years, followed by softball, swimming, touch football, social dance, camping, hunting, football, fishing, hiking, baseball and ping pong, in the order named.

Social dancing in fourth place is the only rhythmic activity to place among the first twenty activities in participation.

Track and field, fourteenth, skating, seventeenth, and skiing, twentieth, were the only individual sports to place in the first twenty activities. While ping pong, twelfth, tennis, eighteenth, and horseshoes, sixteenth were the only dual sports to place.

The gymnastic group did not place any activity in the first twenty participated in most during high school years.

Team sports dominate the twenty activities participated in most during high school years, followed closely by outing activities.
A Study of the Mean Background Score in Each of the Activity Groups
Figure 1 shows that the background of the 528 students, in their total participation score, was highest in team sports with a mean score of 601.9. Participation background was next highest in outing activities with a mean score of 400.1.

The ranking of outing activities in second place is probably higher than would be the case in other sections of the country. Most of the 528 students included in this study came from Utah and Idaho. They had excellent opportunities for easy participation in all types of outing activities.

The comparatively low mean score of individual sports reflects the present emphasis in our physical education programs toward the teaching of team sports and dual sports. Individual sports low mean score is partly accounted for by the inclusion of golf, archery, and skiing. These sports, although well known in this area, require a high individual expense on the part of a high school student.

Aquatics undoubtedly would have scored higher in participation during high school years if there were year around facilities for these activities. Very few high schools in the State of Utah and Idaho have facilities for an aquatic program.

Rhythms would not be expected to score high in participation during high school years. The results in these activities is probably about normal.

Gymnastics, although not the lowest ranking of the physical education activities, is not stressed as part of the physical education in the area. Probably the reason for it not being the lowest in the mean score participation, is the fact that a number of the students in this study came from eastern states. In these areas gymnastics receive more emphasis.
Table 12. A distribution of the current interests of the 528 students in each of the physical education activities included in the study.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not Acquainted</th>
<th>Indifferent</th>
<th>Likes</th>
<th>Prefers</th>
<th>Total*</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Team Sports</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basketball</td>
<td>12</td>
<td>6</td>
<td>57</td>
<td>231</td>
<td>222</td>
<td>2229</td>
</tr>
<tr>
<td>Baseball</td>
<td>21</td>
<td>12</td>
<td>120</td>
<td>198</td>
<td>87</td>
<td>1632</td>
</tr>
<tr>
<td>Softball</td>
<td>12</td>
<td>3</td>
<td>169</td>
<td>262</td>
<td>82</td>
<td>1983</td>
</tr>
<tr>
<td>Football</td>
<td>42</td>
<td>34</td>
<td>115</td>
<td>195</td>
<td>142</td>
<td>1945</td>
</tr>
<tr>
<td>Soccer</td>
<td>66</td>
<td>210</td>
<td>153</td>
<td>84</td>
<td>15</td>
<td>1356</td>
</tr>
<tr>
<td>Touch Football</td>
<td>39</td>
<td>33</td>
<td>165</td>
<td>237</td>
<td>54</td>
<td>1818</td>
</tr>
<tr>
<td>Volley Ball</td>
<td>30</td>
<td>51</td>
<td>160</td>
<td>232</td>
<td>55</td>
<td>1805</td>
</tr>
<tr>
<td>Ice Hockey</td>
<td>45</td>
<td>306</td>
<td>99</td>
<td>57</td>
<td>21</td>
<td>1287</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>39</td>
<td>372</td>
<td>84</td>
<td>30</td>
<td>3</td>
<td>1170</td>
</tr>
<tr>
<td><strong>Individual Sports</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Track and Field</td>
<td>33</td>
<td>42</td>
<td>162</td>
<td>201</td>
<td>90</td>
<td>1857</td>
</tr>
<tr>
<td>Archery</td>
<td>36</td>
<td>219</td>
<td>126</td>
<td>123</td>
<td>24</td>
<td>1464</td>
</tr>
<tr>
<td>Golf</td>
<td>45</td>
<td>312</td>
<td>75</td>
<td>63</td>
<td>33</td>
<td>1311</td>
</tr>
<tr>
<td>Skiing</td>
<td>24</td>
<td>189</td>
<td>66</td>
<td>143</td>
<td>106</td>
<td>1700</td>
</tr>
<tr>
<td>Bowling</td>
<td>27</td>
<td>87</td>
<td>117</td>
<td>225</td>
<td>72</td>
<td>1812</td>
</tr>
<tr>
<td>Skating</td>
<td>9</td>
<td>66</td>
<td>113</td>
<td>240</td>
<td>100</td>
<td>1880</td>
</tr>
<tr>
<td>Billiards</td>
<td>38</td>
<td>100</td>
<td>120</td>
<td>204</td>
<td>66</td>
<td>1744</td>
</tr>
<tr>
<td>Rifery</td>
<td>9</td>
<td>78</td>
<td>81</td>
<td>192</td>
<td>168</td>
<td>2016</td>
</tr>
<tr>
<td>Snow Shoeing</td>
<td>54</td>
<td>324</td>
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</table>

* Weighted on the following basis: Dislikes - 1, Not Acquainted - 2, Indifferent - 3, Likes - 4, and Prefers - 5.
Table 12 is an analysis of the current interests of the 528 students in each of the 52 physical education activities.

The ten activities with the highest total interest scores, in order of interest, are as follows: (1) Hunting, (2) Basketball, (3) Camping, (4) Fishing, (5) Hiking, (6) Swimming, (7) Social dance, (8) Casting, (9) Riflery, and (10) Horseback riding.

Outing activities dominate all other activities in current interest with the exception of basketball which ranks second.

The ten most preferred activities, in order of preference are: (1) Hunting, (2) Fishing, (3) Basketball, (4) Camping, (5) Riflery, (6) Hiking, (7) Swimming, (8) Football, (9) Boating, and (10) Horseback riding.

The most preferred activities are not necessarily the activities which score the highest in total interest. Notable exceptions are football, which ranked eighth among the preferred activities, but was twelfth in total interest and boating which was ninth on the preferred list but was thirteenth in total interest.

The ten activities said to be disliked by the greatest number of students, in order of dislike, are: (1) Boxing, (2) Tap dancing, (3) Folk dancing, (4) Pyramids, (5) Wrestling, (6) Tumbling, (7) Modern dancing, (8) Acrobatics, (9) Apparatus, and (10) Squash.

A large percentage of the students were not acquainted with many of the activities included in the study. This is an indication that they are not being taught a variety of skills in a variety of sports. The ten activities with which the students were least acquainted are: (1) Squash, (2) Acrobatics, (3) Field Hockey, (4) Water baseball, (5) Clog dancing, (6) Water volleyball, (7) Water polo,
(8) Fencing, (9) Modern dancing, and (10) Trampoline.

No effort was made in this study to measure or determine the effects of participation upon interests in physical education activities.
Figure 2

A Study of the Mean Interest Score of 528 Students in each of the Activity Groups.
Figure 3
An Analysis of the interests of 528 Students in each of the Activity Groups

- Dislikes
- Not acquainted with
- Indifferent with
- Likes
- Prefers
Figure 3 shows that the activity groups, dual sports, rhythms, and gymnastics are the most disliked; whereas outing activities, team sports and individual sports were the least disliked.

The activity groups the students were least acquainted with are aquatics, gymnastics and rhythms. The activity groups the students are most acquainted with are team sports, outing activities and individual sports.

The activity groups to whom the students were most indifferent are dual sports, outing activities and team sports. It is well to note that none of the activities varied very much in this respect.

Outing activities were rated by 33.8 percent of the students as being most liked, followed by team sports, 32 percent, and individual sports with 30.1 percent. The least liked activity groups were gymnastics, 10.3 percent, and aquatics, 17.3 percent.

The activity groups most preferred are outing activities, team sports and individual sports.
Table 13. A distribution as to the desire for participation and instruction in the physical education activities included in the study.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Participation</th>
<th>Percent</th>
<th>Instruction</th>
<th>Percent</th>
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</thead>
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Table 13. (continued)

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<th>Instruction</th>
<th>Percent</th>
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Table 13 is an analysis of the desire for participation and instruction in the physical education activities included in the study. Three hundred and nine, or 58.5 percent of the students wanted participation in basketball in college. Two hundred and thirty-seven students, or 44.9 percent, wanted instruction in basketball in college.

The activities in which 40 percent of the students wanted participation, in order of preference, are: basketball, social dancing, swimming, hunting, riflery, camping, and fishing. It is interesting to note that only one team sport, rhythm, and aquatic activity is included in this 40 percent. The remainder of the activities are all outing activities.

From the total activity list of 52 activities, in 29 of the activities, a higher percentage of the students wanted participation than instruction and in 23 of the activities the instruction percentage was higher than the participation percentage. Apparently some of the students feel that they prefer to learn the basic skills of the activity before participating in it.

It is interesting to note that in 44.2 percent of the activities the students feel they need more instruction before participation.

Most of the activities which rank highest in participation in college also rank high in desire for instruction. The ten activities the greatest number of students wanted instruction in in college, in order of preference, are: swimming, social dancing, basketball, riflery, skiing, diving, tennis, archery, baseball and track and field.
Figure 4

A Study of the Participation and Instruction Mean for each of the Activity Groups

- Desires Participation
- Desires Instruction
Figure 4 shows an analysis of the 528 students as to their desires for participation and instruction in physical education activities in college by activity groups.

Participation in outing activities far exceeds the desire for instruction. Desires for participation is also greater than the desire for instruction in team sports and rhythms.

The desire for instruction in physical education activities in college is greater than participation in individual sports, aquatics and gymnastics.

Outing activities rank highest for desired participation in college, gymnastics rank lowest.

Individual sports rank highest for desired instruction in college and gymnastics lowest.
Table 14. A distribution of self-rated skills in each of the physical education activities of the 528 students.

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**Aquatics**

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<th>Have Tried</th>
<th>Do Fairly Well</th>
<th>Do Well</th>
<th>Excel</th>
<th>Total* Score</th>
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<td>612</td>
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<td>Diving</td>
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<td>318</td>
<td>456</td>
<td>308</td>
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<td>Life Saving</td>
<td>295</td>
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<td>216</td>
<td>176</td>
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<td>Water Polo</td>
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Table 14 (continued)

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<th>Do Fairly Well</th>
<th>Do Well</th>
<th>Excel</th>
<th>Total* Score</th>
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<td>612</td>
<td>120</td>
<td>1535</td>
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<td>Tap Dancing</td>
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<td>51</td>
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<td>306</td>
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<td>939</td>
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<td>0</td>
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<td>327</td>
<td>680</td>
<td>470</td>
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<td>240</td>
<td>480</td>
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<td>360</td>
<td>576</td>
<td>500</td>
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<td>414</td>
<td>408</td>
<td>230</td>
<td>1397</td>
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<td>276</td>
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<td>994</td>
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<td>184</td>
<td>546</td>
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<td>190</td>
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</tbody>
</table>

*Weighted on the following basis: Never Tried = 1, Have Tried = 2, Do Fairly Well = 3, Do Well = 4, and Excel = 5.*
Table 14 is an analysis of the self-rated skills of the 528 students in each of the physical education activities.

The ten activities placing highest in total skill score in order of rank are: camping, hiking, hunting, fishing, horseback riding, basketball, swimming, softball, social dancing, and skating.

Field hockey, squash, clog dancing, snowshoeing, fencing, water polo, water basketball, water baseball, apparatus, trampoline, tap dancing, and modern dancing were the activities ranking the lowest total skill score.

The activities in which the students thought they had well developed skills in are: camping, hiking, fishing, hunting, social dance, swimming, horseback riding, basketball, softball, volleyball, and touch football.

Further analysis of table 14 reveals that a large number of students have never tried the activities. Activities which have never been tried by 300 or more of the 528 students are: field hockey, ice hockey, golf, archery, snowshoeing, fencing, squash, handball, water polo, water basketball, water baseball, apparatus, pyramids, trampoline, rope climb, acrobatics, tap dancing, clog and folk dancing.

The ten activities in which the students consider themselves to excel in are: hunting, camping, hiking, horseback riding, fishing, basketball, swimming, riflery, boating, casting.

No attempt was made to compare the students' rating of skills with that of actual skill performance tests or ratings by their instructors in the various activities.

However, such a study is recommended as an interesting thesis problem.
A Study of the Mean Score of Self-rated Skills of 528 Students in each of the Activity Groups

* Figure 5 is an analysis of the self-rated skills of 528 students by activity groups. It shows the mean skills score is highest in outing activities and team sports and lowest in rhythms and gymnastics.
Figure 6

An Analysis of the self-rating of skills of the 528 students in each of the activity groups

- Never tried activity
- Have tried activity
- Do fairly well
- Do well
- Excel in
In figure 6, the self-rating of skills of the 528 students in the physical education activities are analyzed in percent for each activity group.

Rhythms, gymnastics, and aquatics are the activity groups containing the highest percentages of students who have never tried the activities.

Dual sports, individual sports, and gymnastics include the largest percentages of students who have only tried the activities.

Team sports, outing activities, and individual sports rank highest in percentages of students who think they can perform the activities fairly well, and well.

Gymnastics, rhythms and aquatics show the smallest percentage of students who think they can do the activities fairly well.

Gymnastics, rhythms, and dual sports show the smallest percentage of students who think they can do well in the activities.

The activities in which the largest number of students considered they excel in are: team sports, outing activities, and individual sports.

It is well to note that the activity groups which have the smallest percentages of students who think they are fairly well, well and excel in activities, have the largest percentages of students who have never tried the activities. This illustrates a common relationship between participation and skill in physical education activities, and also indicates a failure on the part of the secondary school to introduce into the curriculum the activities the students rate as having never tried.
Table 15. A distribution of the rankings of 20 physical education activities as to participation (background), current interest, desires for participation and instruction, and skills.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total participation</th>
<th>Total current interest</th>
<th>Total Desires for participation</th>
<th>Total Desires for instruction</th>
<th>Total self-rated skills</th>
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</thead>
<tbody>
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<td>Basketball</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Softball</td>
<td>2</td>
<td>11</td>
<td>10</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Swimming</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>7</td>
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<tr>
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<td>12</td>
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</tr>
<tr>
<td>Social dance</td>
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<td>2</td>
<td>2</td>
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<td>3</td>
<td>6</td>
<td>27</td>
<td>1</td>
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<tr>
<td>Hunting</td>
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<td>1</td>
<td>4</td>
<td>17</td>
<td>3</td>
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<tr>
<td>Football</td>
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<td>15</td>
<td>16</td>
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<tr>
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<td>7</td>
<td>19</td>
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<td>9</td>
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<td>14</td>
<td>21</td>
<td>11</td>
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<tr>
<td>Track &amp; field</td>
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<td>16</td>
<td>18</td>
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<td>Horseshoes</td>
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</tr>
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<td>Tennis</td>
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<tr>
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<td>11</td>
<td>55</td>
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</tbody>
</table>
Table 15 shows the relative rankings of the 20 physical education activities participated in most by the 528 students in the study. The activities are ranked as to participation, current interest, students desire for participation and instruction in college, and the self-rated skills of the student.

The team sports football, basketball, baseball, softball, and touch football rate lower in current interest than they do in participation. The only explainable reason for this seems to be due to the concentration of team sports in the high schools physical education programs, which offers the student insufficient opportunity to satisfy his interest for participation in other activities.

The outing activities all rank comparably high in current interest and still higher in participation. This is only natural, in that the majority of the students come from a region where all outing activities are very popular.

The dual sports, tennis, ping pong, and horseshoes were the only three in this classification to rank in the first twenty activities of the study. With the exception of horseshoes, the other dual sports ranked higher in participation than in interest. It is interesting to note that boxing and wrestling, the very popular dual sports in the Tolman study did not rank in the first twenty activities for participation. This may be explained in that Utah does not look favorably upon boxing as a required physical education activity. However, wrestling is included in most programs. Yet, being combative in nature, and requiring a large amount of physical contact they are not particularly cared for by the average student.

This study makes no attempt to analyze the nature of, or relationship between interests and desires. However, such a study may help us
to understand the value of interest and student desires in the physical education programs.

The individual sports ranking in the first twenty activities should have very little comparable difference in ranking as to participation or interest. For example, track and field ranks fourteenth in participation and sixteenth in interest. With the exception of skating, individual sports rank higher in desire for instruction than the desire for participation. This brings forth the fact that the student feels he needs more instruction in individual sports before participation.

Further analysis of the rankings of physical education activities, seem to reveal the ranks in participation are more closely parallel to the rankings in self-rated skills than they are to the rankings of interest.

The relationship between the amount of participation and performance in physical activities has long been observed by physical educators. It would seem, however, that interests in activities should more closely parallel participation. Again, it is quite probable that the explanation is to be found in the practice of requiring a relatively large number of students to participate in a relatively small number of team sports in high school physical education programs, regardless of interests and desires of students.

As was previously suggested in this study, more information is necessary concerning the nature of interests and desires and their inter-relations with participation in physical education.
CONCLUSIONS

The conclusions based on the study just completed are as follows:

(1) Of the 528 students in the study, 290 or 54.9 percent, came from Utah, 93 or 17.6 percent from Idaho, and 145 or 27.5 percent from other states. This includes eight students from Canada, one from China, and one from Lebanon.

(2) Seventy-two or 13.6 percent of the students in this study did not receive a physical examination (by a medical doctor) while in high school.

(3) The majority of the physical education activities participated in by the students included in this study, were team sports.

(4) Outing activities constitute the majority of the physical education activities participated in most not under high school supervision by the students in the study.

(5) The ten physical education activities scoring highest in current interest by the students in the study are as follows:
(1) hunting, (2) basketball, (3) camping, (4) fishing, (5) hiking, (6) swimming, (7) social dance, (8) casting, (9) riflery, and (10) horseback riding.

(6) The highest total interest scores of the students in this study were in outing activities and individual sports, and lowest in gymnastics.

(7) The activity groups most preferred by the students in the study are outing activities, team sports, and individual sports.

(8) Most of the activities which rank highest in participation in high school also rank highest in the desire for instruction.
(9) The ten activities the greatest number of students wanted instruction in in college in order of preference are: (1) swimming, (2) social dance, (3) basketball, (4) riflery, (5) skiing, (6) diving, (7) tennis, (8) archery, (9) baseball and (10) track and field.

(10) Individual sports rank highest for desired instruction in college and gymnastics lowest.

(11) The largest number of students in this study think they are best skilled in outing activities and team sports; the least skilled in gymnastics and rhythms.

(12) The activities in which the largest number of students considered they excel in are: team sports, outing activities and individual sports.

(13) A comparison of figures 3 and 5 shows that students prefer those physical education activity groups which they consider themselves to excel in. This comparison will also show that those activity groups having the highest percentage of students disliking activities also have the highest percentage that have never tried the activity.

(14) Basketball is the physical education activity ranked highest by the students in participation and desires for participation. Hunting ranked highest in current interests. Swimming in desire for instruction and camping highest in self-rated skills.

(15) An analysis of the self-rating of skills in figure 6 reveals that a large percent of the students have never tried the activities listed by this study. The writer, therefore, feels justified in assuming the male students entering the Utah State Agricultural College as freshmen in the fall quarter of 1950 have not been taught a variety of skills in a variety of sports.
RECOMMENDATIONS

The following recommendations are submitted:

(1) That the high schools, from which the students in this study graduated, adopt as broad a program of physical education activities as available teaching personnel and facilities will permit.

(2) It is recommended that the high schools represented by this study select a variety of activities from several of the activity groups and that each student be instructed in the basic skills of that sport.

(3) It is recommended that further interest studies be made in physical education in order that we may better understand the relationship of interests to the planning and selection of activities for a physical education curriculum that will satisfy the needs, interests, participation and desires of the students in high school and college.
SUMMARY

This study consists of a normative survey of the physical education background and current interests of 528 freshmen boys at the Utah State Agricultural College, Logan, Utah in 1950.

The object of the study was to determine (1) the physical education background of the freshmen boys matriculating at the Utah State Agricultural College in the fall quarter of 1950, and (2) the current interests of each of these boys in physical education activities.

In the collection and analysis of material pertinent to the objectives of the study, the writer was endeavoring to prove that male students entering the Utah State Agricultural College as freshmen have not been taught a variety of skills in a variety of sports.

The review of literature indicated that relatively few studies have been made of the physical education activity background of students as a means of evaluating needs of students in physical education.

The group interview questionnaire technique of educational research was used as a method for gathering the data necessary to the study.

A method of procedure was developed for classifying, evaluating and analyzing this data for each of the following:

(1) Area location of students in the study.

(2) Amount of physical education required and actually taken in high school.

(3) Number of physical examinations given to students in high school.

(4) The participation of students in physical education activities, both extra-curricular and curricular, under high school supervision and not under high school supervision.
(5) The total participation of each student in physical education activities.

(6) The current interests of students in physical education activities.

(7) The desires for participation and instruction in physical education activities in college.

(8) A self-rating of skills of students in physical education activities.

A summary of the findings of the study are as follows:

(1) Seventy-two, or 13.6 percent, of the students did not receive physical examinations while in high school.

(2) Basketball is the physical education activity participated in most under high school supervision. The next nine physical education activities were: softball, touch football, track and field, football, volleyball, baseball, tumbling, swimming and ping pong.

(3) The majority of physical education activities participated in were team sports.

(4) The physical education activities participated in most not under high school supervision are: basketball, camping, hunting, swimming, fishing, hiking, social dancing, softball, and horseback riding.

(5) Outing activities constitute the majority of the physical education activities participated in most not under high school supervision.

(6) The ten physical education activities participated in most during high school years, supervised and non-supervised, are: basketball, softball, swimming, touch football, social dancing, camping, hunting, football, fishing and hiking.

(7) The ten physical education activities scored highest in current interest are: hunting, basketball, camping, fishing, hiking, swimming,
social dance, casting, riflery, and horseback riding.

(8) The highest total interest scores of the students were in outing activities and individual sports. The lowest total interest score was in gymnastics.

(9) The activity groups preferred by students are: outing activities, team sports, and individual sports.

(10) Most of the activities ranking highest in participation in college also rank highest in the desire for instruction.

(11) The activities the greatest number of students wanted instruction in in college are: swimming, social dance, basketball, riflery, skiing, diving, tennis, archery, baseball, and track and field.

(12) Individual sports rank highest for desired instruction in college and gymnastics lowest.

(13) The activities the students rate themselves as being most skilled in are: camping, hiking, hunting, fishing, horseback riding, basketball, swimming, softball, social dance and skating.

(14) Information analyzed reveals that a large number of students have never tried the activities in the study.

(15) The activities the students consider themselves to excel in are: hunting, camping, hiking, horseback riding, fishing, basketball, swimming, riflery, boating and casting.

(16) The activities in which the largest number of students consider they excel in are: team sports, outing activities, and individual sports.

(17) A comparison of tables 3 and 5 shows that students prefer those physical education activity groups which they consider themselves
to excel in. This comparison will also show that those activity groups having the highest percentage of students disliking activities also have the highest percentages that have never tried the activity.

(18) Basketball is the physical education activity ranked highest in participation and desires for participation. Hunting ranks highest in current interest, swimming highest in desire for instruction and camping highest in self-rated skills.

(19) The team sports - touch football, softball, football and baseball - rate lower in interest by the students than they do for participation.
BIBLIOGRAPHY


APPENDIX
DEPARTMENT OF PHYSICAL EDUCATION AND RECREATION

QUESTIONNAIRE

General Instructions:
Your cooperation is requested in filling out this Questionnaire; The answers you give will be of value to the Physical Education Department and may determine the future activity courses offered at the Utah State Agricultural College.

Take your time --- Don't hurry

If at any time you have a question, raise your hand and the Instructor will help you.

Part I

General Information

Name ______________________________

High School Attended _______________ City _____________________ State ________

Approximate total enrollment of your High School at the time you attended? ________________________ (9-12 grade)

A. Physical Education requirements.

Note: Answer the following questions based on your High School experience—(grades 9-12) Place a circle around the number or word which is most nearly correct in your case.

1. Was Physical Education required in your High School - Yes - No
   If yes, how many years were required? 1, 2, 3, 4.

2. How many years of P.E. classes did you take while in High School? 1, 2, 3, 4.

3. How many periods each week did Physical Education classes meet? 0, 1, 2, 3, 4, 5.

4. What was the total length of class period in Physical Education? 30 - 40 - 50 - 60 minutes.

5. Was credit toward graduation given - Yes - No

6. Did you have co-recreation periods in Physical Education - Yes - No
   If yes, How many times each week - 1, 2, 3 - Each Month 1, 2, 3, 4

B. Health

1. Did you have a physical examination given by a medical doctor while in high school? - Yes - No
   If yes, how many times, 1, 2, 3, 4, (More than 4)

2. Was Health or Hygiene required in your school? - Yes - No
   If yes, how many years did you take health or hygiene? 1/3 1/2

3. Did you receive health instruction as a part of some other class or as a separate class? - separate - other.

4. How many periods per week did you have Health Instruction? 1, 2, 3, 4, 5

5. Was Credit given - Yes - No
PART II

What were your experiences in physical education activities since beginning high school? (9th grade)

Instructions:
1. Check all activities in Column I before proceeding to column 2 etc.

SECTION I

Place a check ( ) mark in the appropriate column if you participated in the activity in high school.

a. Place a check mark in Column 1 if participation was in P.E.
b. Place a check mark in Column 2 if participation was in intramurals.
c. Place a check mark in Column 3 if participation was in athletics.

Note: Leave columns blank if you did not participate in the activity in high school.

SECTION II

1. Place a check ( ) mark in one of the three columns if you have participated in the activity outside of school since beginning the ninth grade. (Not under school supervision)

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PART III

What are your Current Interests in Physical Education?

Instructions:

1. Check all activities for Column 1 before proceeding to column 2 etc.
2. Column 1, score your interest in the activity as 1, 2, 3, 4, or 5 based on the following:
   1. Dislikes the activity.
   2. Not acquainted with the activity.
   3. Indifference.
   4. Likes the activity.
   5. Prefers the activity.
3. Column 2, check the activities in which you would like to participate, in college.
4. Column 3, check the activities in which you would like instruction, in college.
5. Column 4, rate yourself from 0-4 as to your ability in each activity as compared to other students in your school.
   0. Activities you Have Never Tried.
   1. Activities you Have Tried.
   2. Activities you Can Do Fairly Well.
   3. Activities you Can Do Well.
   4. Activities you Excel In.

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