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A physical education survey of the Worcester, Massachusetts, public secondary schools

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Boston University
Thesis
A PHYSICAL EDUCATION SURVEY OF
THE WORCESTER, MASSACHUSETTS,
PUBLIC SECONDARY SCHOOLS.
by
Leon O. Dalbeck
BOSTON UNIVERSITY
SCHOOL OF EDUCATION

Thesis

A PHYSICAL EDUCATION SURVEY
OF THE WORCESTER, MASSACHUSETTS,
PUBLIC SECONDARY SCHOOLS

Submitted by

Leon O. Dalbeck
(B. S., University of Illinois, 1930)

In partial fulfillment of requirements for
the degree of Master of Education

1946

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Second Reader: Leslie W. Irwin, Associate Professor of Education
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School of Education
June 4, 1936
2 69 11
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CHAPTER I

THE PURPOSE OF THIS RESEARCH

A college president¹ in an inaugural address once said: "The problem of research is the problem of searching for the truth .... He does not invent the truth, he does not develop the truth, .... he does not do anything whatever to the truth except to uncover it or discover it and expose it to the comprehension of his fellowmen."

The purpose of the author in conducting this research is to discover and relate the truth with an objective of improving, through recommendations, the physical education and athletic programs with which he has been associated, as an instructor in these fields for the past fifteen years.

A Description of the Community

Worcester, Massachusetts, is a city with a population of approximately 200,000 and is located close to the center of population of the New England states. It is often referred to as "The Heart of the Commonwealth" (of Massachusetts).

Worcester is also known as the "City of Diversified Industries"² having over 500 manufacturing establishments. The city is one of the

world's largest machine tool centers. It has the world's largest abrasives plant as well as others known over the industrial world as leaders in their fields.

Worcester's first school was opened in 1731,\(^1\) and thus began a great educational center. It is the seat of Clark University, founded in 1887; Holy Cross College, founded in 1843; Worcester Polytechnic Institute, founded in 1865; Worcester Academy, founded in 1832; Assumption College, founded in 1903; Massachusetts State Normal School (now Worcester State Teachers College), founded in 1874; Worcester Boys' Trade School, founded in 1909; and Worcester Girls' Trade School, founded in 1911.

Worcester is also renowned as a cultural center, having within its borders such institutions as the Worcester Art Museum, containing one of the finest collections of paintings, sculptures, prints, and examples of the decorative arts in the United States; the Worcester Music Festival, held annually for more than 85 years; the home of the American Antiquarian Society, founded in Worcester in 1812 and one of the most distinguished bodies in the country; the Worcester Historical Society; the Worcester Natural History Society, having the second oldest museum in the country and noted for its educational work among children; as well as numerous libraries containing over 1,500,000 volumes.

Recapitulation

The primary purpose of this research is to recommend improvements to be inculcated into the physical education and athletic programs of the public secondary schools of Worcester, Massachusetts. These recommendations are to be based upon the research conducted by the author—the instrument being score cards developed by Dr. John M. Harmon.¹

Worcester, Massachusetts, is a city with a population of approximately 200,000. It is located close to the center of population of the New England states. Worcester is a cultural, industrial center.

CHAPTER II
PUBLIC SCHOOL STATISTICS

The public school system of Worcester, Massachusetts, includes 56 elementary schools, two junior high schools, four senior high schools, and one vocational and continuation school.

The public school enrollment for the year ending June 30, 1943, in the day schools was 28,231 pupils. There were approximately 1,337 employees in the public schools, which number included approximately 1,073 teachers and administrative officers. Of these 1,073 teachers and administrators, there were one director and 23 teachers of physical education, two of whom were on military leave of absence.

The score card evaluation was made of the physical and athletic program as it is conducted in the public secondary schools, with a pupil enrollment of approximately 8,540 and 18 men and women teachers of physical education in the four senior and two junior high schools. At the time of this survey, three teachers were on military leave of absence, hence not involved in this survey.

The elementary school program would be a worthy future study. It would involve 56 schools with approximately 19,443 pupils and only two women traveling physical education teachers.

The Score Card

The score card used in this research is one which was developed by Dr. John M. Harmon as a requirement for his Doctorate which he received from Indiana University in 1932. Being my advisor, he graciously allowed me to use his instrument. This score card is used to survey the efficiency of a large city school program of physical education and athletics (and health as well). It resembles the widely used Strayer and Englhardt school building score cards.

This score card was compiled through the cooperation of prominent leaders in the field as follows: women supervisors and administrators of physical education, thirty-six; men supervisors and administrators of physical education, seventy-three; and athletic directors, fifty-two. The geographical location of these leaders indicates that every section of the United States is well represented.

These leaders evaluated every item by the distribution of an arbitrary number of 2,000 points.

In interpreting the score cards, column one is added and carried forward to column two; likewise column two is added and carried forward to column three, and this column is added and carried forward to the final column. The score opposite every item in the outline is a maximum score to be credited for meeting the standards indicated in full. In using the score card, the evaluation for every item would range from zero to this maximum score indicated.

A facsimile of the first page of the score card as described above is shown in Figure 1.

### I. Instructional Staff

<table>
<thead>
<tr>
<th>A. Kind of Professional Training</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physiology and Anatomy</td>
<td>10</td>
</tr>
<tr>
<td>2. Administration and Supervision</td>
<td>10</td>
</tr>
<tr>
<td>3. Hygiene and Biology</td>
<td>10</td>
</tr>
<tr>
<td>4. Measurement</td>
<td>5</td>
</tr>
<tr>
<td>5. Correctives</td>
<td>6</td>
</tr>
<tr>
<td>6. Activity Technique</td>
<td>25</td>
</tr>
<tr>
<td>a. Water sports</td>
<td>3</td>
</tr>
<tr>
<td>b. Gymnasium</td>
<td>4</td>
</tr>
<tr>
<td>c. Dancing</td>
<td>3</td>
</tr>
<tr>
<td>d. Games of defense</td>
<td>3</td>
</tr>
<tr>
<td>e. Highly organized sports</td>
<td>5</td>
</tr>
<tr>
<td>f. Self-testing activities</td>
<td>3</td>
</tr>
<tr>
<td>g. Games of low organization</td>
<td>4</td>
</tr>
<tr>
<td>7. Psychology</td>
<td>5</td>
</tr>
<tr>
<td>8. Public Education</td>
<td>8</td>
</tr>
<tr>
<td>9. Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>10. Social Sciences</td>
<td>5</td>
</tr>
<tr>
<td>11. Language</td>
<td>3</td>
</tr>
<tr>
<td>12. Research</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Extent of Training</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 60 semester hours college credit</td>
<td>15</td>
</tr>
<tr>
<td>2. 90 semester hours college credit</td>
<td>20</td>
</tr>
<tr>
<td>3. 120 hours and a college degree</td>
<td>40</td>
</tr>
<tr>
<td>4. 135 hours and a college degree</td>
<td>50</td>
</tr>
<tr>
<td>5. 150 hours and a master's degree</td>
<td>65</td>
</tr>
<tr>
<td>6. 150 hours and a master's degree</td>
<td>75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Recency of Training (6 credits in 5 years)</th>
<th>50</th>
</tr>
</thead>
</table>

| D. Membership in 3 to 5 Professional Organizations | 25  |

---

Figure 1. Page One of the Score Card Used for Evaluating Physical Education Programs for High School.

1/. Harmon, op. cit., p. 128.
The main items included in the score card under the heading (A.) Physical Education are: I, Instructional Staff; II, Facilities; III, Program Organization; IV, Program Activities; and V, Professional Assistance. Under heading (B.) Athletic Program, items included are: I, The Daily Practice; II, The Game; III, Personal Contact of Coach with Players and Community; IV, Business Management; and V, Sanitation of and Mental Hygiene in the Dressing Room.

The point evaluation on the maximum score card shows that the most important single item under (A.) Physical Education and given the highest score is I, Instructional Staff, with a 600-point value. Under I, Instructional Staff, are such items as: A, the Kind of Professional Training; B, the Extent of Training; C, Recency of Training; D, Membership in Three to Five Professional Organizations; E, Attendance at Professional Organizational Meetings; F, Length of Teaching Experience; G, Physical Fitness of Instructors; H, Personality of Instructors; and I, the Teaching Efficiency of Instructors.

The highest value under (B.) Athletic Program is credited to I, The Daily Practice. This item consists of such factors as A, Average daily, weekly time that should be given to practice,—for the four major sports, football, basketball, baseball, track and field; and B, Average daily, weekly division of practice which includes the amount of minutes devoted to fundamentals, scrimmage, signals, and lecture for each day of the week, for the four major sports. The value given to I, The Daily Practice, is 650 points.
The Survey Method Used

The method of survey was the unpopular method of sending questionnaires, in the form of these score cards, to be evaluated by each of the 18 instructors of physical education in the public secondary schools. A poor response was expected, but the author hoped to receive a completed score card from at least one instructor in each school. This anticipation was fulfilled.

Questionnaires which were not returned were completed by the author, based upon evaluations given by each instructor's own school colleague who had returned a completed score card and upon the 15 years' intimate knowledge of fellow instructors by the author and investigation of questionable items through interviews with the director and fellow instructors.

The results of this survey are shown on a composite score sheet, Figure 2.

Recapitulation

There are 8,540 pupils and 18 physical education teachers in the secondary schools involved in this survey.

The score cards used were developed by Dr. John M. Harmon as a requirement for his Doctorate at Indiana University in 1932. A facsimile of the first page of the score card used is shown on page 6 and is described on pages 5 and 7. This score card, involving ten pages, was sent to each of the eighteen teachers for self-evaluation.
<table>
<thead>
<tr>
<th>Main Items on Score Card</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
<th>&quot;C&quot;</th>
<th>&quot;D&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td><strong>A. Physical Education Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Instructional Staff (600 points)</td>
<td>349</td>
<td>377</td>
<td>321</td>
<td>384</td>
</tr>
<tr>
<td>II. Facilities (400 points)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>226</td>
</tr>
<tr>
<td>III. Program Organization (400 points)</td>
<td>157</td>
<td>157</td>
<td>161</td>
<td>120</td>
</tr>
<tr>
<td>IV. Program Activities (400 points)</td>
<td>36</td>
<td>86</td>
<td>225</td>
<td>211</td>
</tr>
<tr>
<td>V. Professional Assistance (200 points)</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total Score (Possible 2000 points)</strong></td>
<td>670</td>
<td>698</td>
<td>760</td>
<td>1016</td>
</tr>
<tr>
<td><strong>B. Athletic Program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. The Daily Practice (650 points)</td>
<td>544</td>
<td>186</td>
<td>446</td>
<td>186</td>
</tr>
<tr>
<td>II. The Game (400 points)</td>
<td>310</td>
<td>203</td>
<td>263</td>
<td>248</td>
</tr>
<tr>
<td>III. Personal Contact of Coach with Players and Community (400 points)</td>
<td>125</td>
<td>50</td>
<td>0</td>
<td>200</td>
</tr>
<tr>
<td>IV. Business Management (250 points)</td>
<td>130</td>
<td>155</td>
<td>130</td>
<td>180</td>
</tr>
<tr>
<td>V. Sanitation of and Mental Hygiene in the Dressing Room (300 points)</td>
<td>285</td>
<td>235</td>
<td>205</td>
<td>235</td>
</tr>
<tr>
<td><strong>Total Score (Possible 2000 points)</strong></td>
<td>1394</td>
<td>829</td>
<td>1044</td>
<td>1049</td>
</tr>
</tbody>
</table>

Figure 2. Composite Score of Secondary Schools and Instructors.
<table>
<thead>
<tr>
<th>Main Items on Score Card</th>
<th>High Schools</th>
<th>Junior High Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;A&quot;</td>
<td>&quot;B&quot;</td>
</tr>
<tr>
<td>A. Physical Education Program</td>
<td>I  II  III</td>
<td>IV  V  VI  VII  VIII  IX  X  XI  XII  XIII  XIV  XV  XVI  XVII  XVIII</td>
</tr>
<tr>
<td>I. Instructional Staff (600 points)</td>
<td>342 377 321</td>
<td>342 233 395 196</td>
</tr>
<tr>
<td>II. Facilities (400 points)</td>
<td>3 3 3</td>
<td>226 226 226 233 233 233</td>
</tr>
<tr>
<td>III. Program Organization (400 points)</td>
<td>157 157 161</td>
<td>120 120 170</td>
</tr>
<tr>
<td>IV. Program Activities (400 points)</td>
<td>86 86 225</td>
<td>211 211 225</td>
</tr>
<tr>
<td>V. Professional Assistance (200 points)</td>
<td>75 75 50</td>
<td>75 75 50</td>
</tr>
<tr>
<td>Total Score (Possible 2000 points)</td>
<td>670 698 760</td>
<td>1016 865 1114</td>
</tr>
</tbody>
</table>

B. Athletic Program

<table>
<thead>
<tr>
<th>I. The Daily Practice (650 points)</th>
<th>Boys</th>
<th>Girls</th>
<th>Boys</th>
<th>Girls</th>
<th>Boys</th>
<th>Girls</th>
<th>Boys</th>
<th>Girls</th>
<th>Boys</th>
<th>Girls</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>544</td>
<td>186</td>
<td>446</td>
<td>186</td>
<td>469</td>
<td>186</td>
<td>549</td>
<td>186</td>
<td>187</td>
<td></td>
<td>320</td>
<td></td>
</tr>
<tr>
<td>II. The Game (400 points)</td>
<td>310</td>
<td>203</td>
<td>263</td>
<td>248</td>
<td>297</td>
<td>240</td>
<td>305</td>
<td>223</td>
<td>169</td>
<td></td>
<td>288</td>
<td></td>
</tr>
<tr>
<td>III. Personal Contact of Coach with Players and Community (400 points)</td>
<td>125</td>
<td>50</td>
<td>0</td>
<td>200</td>
<td>55</td>
<td>50</td>
<td>0</td>
<td>75</td>
<td>25</td>
<td></td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>IV. Business Management (250 points)</td>
<td>130</td>
<td>155</td>
<td>130</td>
<td>180</td>
<td>130</td>
<td>155</td>
<td>130</td>
<td>155</td>
<td>100</td>
<td></td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>V. Sanitation of and Mental Hygiene in the Dressing Room (300 points)</td>
<td>285</td>
<td>235</td>
<td>205</td>
<td>235</td>
<td>265</td>
<td>235</td>
<td>300</td>
<td>235</td>
<td>260</td>
<td>270</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score (Possible 2000 points)</td>
<td>1394</td>
<td>829</td>
<td>1044</td>
<td>1049</td>
<td>1216</td>
<td>866</td>
<td>1284</td>
<td>874</td>
<td>741</td>
<td></td>
<td>1168</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Composite Score of Secondary Schools and Instructors.
CHAPTER III
AN ANALYSIS OF THE COMPOSITE SCORE CARD

An analysis of the composite score card, Figure 2, reveals the following: Instructional Staff, possible 600 points, range for Worcester instructors involved from 233 to 520 points with a mean of 377 points; Facilities, possible 400 points, range from 3 to 290 with a mean of 212 points; Program Organization, possible 400 points, range from 120 to 243 points with a mean of 130 points; Program Activities, possible 400 points, range from 86 to 263 points with a mean of 213 points; Professional Assistance, possible 200 points, range from 50 to 75 points with a mean of 64 points. The possible maximum score for each instructor was 2,000 points. The range of total points scored by instructors was from 670 to 1,300 points with a mean of 1,042 points.

The individual school program for boys and for girls was considered when evaluating main item (B.) Athletic Program. Schools, not instructors as in main item (A.) Physical Education, were scored because one, two, or three instructors contribute to each whole school program. The girls' program in the junior high schools was not scored because they have no interscholastic athletics. The scores are as follows: I, Daily Practice, possible 650 points, ranging from 186 to
549 points with a mean of 272 points; II, The Game, possible 400 points, ranging from 109 to 310 points with a mean of 212 points; III, Personal Contact of Coach with Players and Community, possible 400 points, ranging from 0 to 200 points with a mean of 75 points; IV, Business Management, possible 250 points, ranging from 100 to 180 points with a mean of 139 points; and V, Sanitation of and Mental Hygiene in the Dressing Room, possible 300 points, ranging from 205 to 300 points with a mean of 253 points. The possible maximum score for each school was 2,000 points. The Worcester secondary school range was from 741, a junior high school, to 1,394 points for a senior high school. The mean for all was 1,047 points.

Evaluation of the Physical Education Program

Under Instructional Staff, it is interesting to note that those teachers whose college training was received in the old three-year specialized physical education colleges had scores comparable to other teachers who had received bachelor's degrees but who did not major in physical education in their undergraduate work. There were others who had the three-year specialized course and who later continued further studies in other colleges, completing the requirements and receiving a bachelor's degree. These are the teachers whose scores fall in the 400-point classification. It is redundant to point out that the two instructors receiving the highest score are junior high school teachers. This is due to a policy traditional
with the past administration. Both of these teachers majored in physical education in their undergraduate schools and both have continued studies in their field on graduate levels.

According to Leslie W. Irwin, Ph. D.:\(^1\)

"The success of the curriculum in physical education, other things being equal, is almost wholly dependent upon the individual staff members. Untrained, or poorly trained, teachers cannot administer and conduct an efficient and successful program of physical education."

With this in mind and recalling the items which comprise I, Instructional Staff, listed on page 7, consider that eight teachers surveyed received scores of less than 350 points, that 14 teachers received less than 75 per cent of the possible score of 600, which indicates that there is a definite need in Worcester for more in-service training.

All of these 14 teachers failed to score in the item, Recency of Training, (six credits in five years), which has a valuation of 50 points. This condition will undoubtedly be corrected due to the proposed Elsbree\(^2\) "incentive" salary plan which gives higher salaries to teachers who improve their professional training and who attain higher degrees. The standards have been raised for new teachers coming into the Worcester schools, the requirement now being a master's degree for appointment into the high schools.

---


Teachers already in the Worcester system may, or may not, take advantage of the Elsbree plan depending upon their present salary level. It is obvious that the men teachers in high school at present will not likely have a desire to improve professionally because their present salary is higher than the Elsbree plan will pay one having a master's degree. However, a few of these men teachers are contemplating early retirement and will be replaced by higher qualified teachers due to the higher requirements for future appointment.

Another factor which deprived many from receiving a better score was that they were graduates of colleges which did not offer physical education courses; hence, they are not teaching in their major field. They are "physical educators" because they were star athletes in their high school and college days.

There is no encouragement for teachers to become members of professional organizations nor opportunities to attend such organizational meetings; hence, a general loss of 50 points for teachers.

A large percentage of the personnel scored high in Length of Teaching Experience and Physical Fitness of Instructors. However, there was a variation of credit for Personality and Character and for Teaching Efficiency.

Item II, Facilities, shows a range from practically zero for a high school which has no gymnasium or other facilities for physical education to schools having both boys' and girls' gymnasiums
being credited with almost 300 of a possible 400 points. The biggest point loss for these schools was due to lack of Outdoor Facilities, which is valued at 70 points. The High School Athletic Field is not credited under this item because it is too distant from any school involved to be of any practical value to their physical education program.

No public school in Worcester has within its walls a swimming pool; hence, a loss of five points for all schools.

In justice to the school which has no facilities, it should be pointed out that the girls from this school use the facilities of the Y. W. C. A. which is only one block away. The boys use the Y. M. C. A. which is a ten-minute walk from their school. Both boys and girls from this school are scheduled for single periods in physical education which means that the girls have more time "on the floor" than the boys; this explains the reason that the girls' program in this school received a higher score than the boys' program under the item, Program Activities.

Two of the high schools have single gymnasiums which are used by the boys and girls on alternate days; hence, the low 200 score for these schools. The one senior and two junior high schools which have gymnasiums for both boys and girls have scores in the high 200's. One junior high school which falls within this classification is lower than the other two because its gymnasium is located in the center of the school building surrounded by classrooms and shops;
hence, their activities are more restricted.

Auxiliary rooms for physical education, such as apparatus or activity rooms, class or team lecture rooms, corrective rooms, rest rooms, health unit rooms, and properly equipped instructor's offices are generally not prevalent in the Worcester school buildings; hence, the loss of up to 50 points due to various degrees of absence of these facilities.

The Equipment item was another source of lost points due to the indifferent attitude of the past administration and its failure to provide proper gymnasium equipment. The last school built, a junior high school completed in 1931, had very little gymnasium equipment provided when it was opened. This condition maintained until two years ago. With a change of administration, more adequate equipment is being provided. The present administration is aware of this failing and is giving evidence of correction.

A high correlation is shown between Facilities, Program Organization, and Program Activities, which is obvious. Again Irwin may be quoted: 1/ "The facilities, equipment, and available space affect the type of program and the activities included in the curriculum perhaps to a greater extent than any other factor with the possible exception of sufficient teachers to conduct the program."

The three schools which have dual gymnasiums naturally scored higher than those having only single gymnasiums. The latter 1/ Op. cit. p. 57.
group of schools lost 55 points due to failure to get credit on item A., 100 Per Cent Enrolled in Physical Education, under III, Program Organization.

All schools lost 45 points each because every pupil is not in physical education 60 minutes daily in the Worcester system.

All schools lost 35 points due to the fact that the physical education teachers do not give an annual physical examination to the pupils of their schools. The school physician's annual examination is all that is given in Worcester.

All schools lost another 40 points because item E., Assignments to Classes are Made According to the Pupil's Skills and Individual Needs, is not the procedure followed in Worcester.

Depending upon each high school's facilities, credit is given for physical education and physical education is required in various degrees for graduation in these schools. In the junior high schools physical education is required, but no credit is given.

Scores for G., Corrective Physical Education, and L., Award System, ranged from zero to a low fractional credit for these two items which have an aggregate total of 45 points.

Considering IV. Program Activities, most of the high schools failed to score under B., The Organization of a Large Variety of Sports in the Intramural Program. The junior high schools scored 75 of a possible 150 points due to their program of intramurals in three sports. Under C., The Interscholastic Athletic Program to Include 8 to 14 Sports, Depending upon the Number Enrolled, the high schools
scored greater than the junior high schools due to the limited three-sport program conducted on the junior high school level. Again, the school with no facilities had the lowest score because of failure to score many points on A., Variety, Emphasis, and Extent of Participation During the Instructional Period. This was due to the limited amount of time their pupils are "on the floor." Other high schools, higher on the Facilities range but comparatively lower on the Activities range, are so because of neglecting to take full advantage of their favorable position by their failure to conduct intramurals. However, one high school coach does conduct an intramural program before he selects his varsity squad; hence, his school although lower in comparison on facilities is scored higher on Program Activities because of this factor.

The three items under V. Professional Assistance run consistent throughout all schools. No credit was given to any school for A., The School or Departmental Library Has at Least Five Magazines in the Field of Education and Physical Education ..., because no school provides such. All received 50 points credit because the public library enables credit applied to B., The Library Has a Good Variety of at Least 30 Books in the Physical Education Field, Published within the Last Ten Years. Under C., Supervision--The supervisor should be responsible for best possible methods, encourage initiative of teachers, improve teaching, maintain a democratic spirit, set up definite standards, and in other ways motivate teachers--,
only the men high school teachers are given 25 points due to the fact that the director does visit them often, mostly in relation to the athletic program. None of the other teachers are supervised as it is considered under C., Supervision.

It should be explained at this point that the Director of Physical Education was originally appointed as Director of Athletics with the express purpose of building up the athletic prestige. At that time there was also a Director of "Physical Training" whose work was to organize and supervise the physical (education) training program. During the depression years this Director of Physical Training retired. To save on the salary budget, upon his retirement, the school department consolidated these two directorships under the present Director of Physical Education. Both directorships were, and still are, full-time positions when properly conducted by qualified leaders. This one factor, as much as any one thing, attributes to the generally poor physical education program because of the lack of those supervisory practices listed above.

Evaluation of the Athletic Program

As stated on page 10, the B. Athletic Program was evaluated according to the program as it is conducted for boys and girls in each secondary school and not by instructors as in part A. Physical Education Program, because one, two, or three different instructors in each school contribute to the "whole" school program of athletics for boys and for girls.
Under I., The Daily Practice, the point valuation for the girls' program is almost "unionized" for the daily practice time is the same, prearranged. However, with the boys' program, there is a variation due to the interest and conscientiousness of different coaches. The high school and junior high school coaches who were both athletes and trained physical educators gained the highest scores under this item of I., The Daily Practice. The one exception to the above statement is a coach, although low in credit for Instructional Staff, not being a physical education major, who has dynamic enthusiasm which reflects in his team success and the conduct of his practice. This enthusiasm is also reflected, in this particular case, under III., Personal Contact of Coach with Players and Community, in which item he received a comparatively high credit of 125 points. The lowest score on the high schools boys' level can be attributed directly to lack of interest, as well as lack of training, for one coach who has two major sports teams under his direction. This factor also directly influences the low score of this school under II, The Game.

III, Personal Contact of Coach with Players and Community was also a low-score item. Most of the points received were credited under A., Individual Coaching Conferences with Every Team Member During the Season. Most failed to receive credit on items B., The Coach Makes Many Social and Civic Contacts with His Players, and D., The Coach Is Very Active in Extra-curricular Activities Other Than
Athletics, which items are scored 100, 50, and 75 points respectively. Item III, its effect upon the physical, social, emotional, and recreational development of a school pupil of the secondary school level would be a worthy future research problem.

Under IV., Business Management of Athletics, the high school boys' program received a constant value of 130 of a possible 250 points; the girls' program, a constant value of 155 points with the exception of one which was credited with 180 points. This item, in Worcester, is controlled by the Director of Physical Education and policies of the School Department. All schools received equal credit under B., The Salary of the Coach Is Paid in Full from the Same Source As that of Other Teachers; C., Games Are Scheduled by the Director; E., Athletic Equipment Is Purchased by the Director; and, F., Game Officials Are Hired by the Director. A higher value is shown for the girls' program for this item due to the fact that these coaches received 25 points credit, of a possible 50 points, under A., The Coach Keeps An Individual, Accumulative Record of Each Player. One girls' coach credited herself with 50 points for this item which gives her school a higher point value than the others.

A variance of credit is shown under V., Sanitation of, and Mental Hygiene in, the Dressing Room. The girls' program remained constant in all the high schools, all receiving credit for B., The Janitor Is a Full Time Employee and Not Hired by the Hour; C., The Boys (or girls) Have a Sense of Responsibility for the Equipment which
They Do Not Try to Avoid; D., Stealing of the Other Fellow's Equipment Is Not a Problem; E., There Is a Spirit of Cooperation in the Use of Equipment and Facilities; and, F., Profanity Is Seldom Heard in the Dressing Room. Item A., Dressing Rooms Are Cleaned Perfectly After Every Day's Use, was credited variably because the Rules of the School Committee specify: 1/ "5. Classrooms - Shall sweep all classrooms three times weekly, and shall keep stairs and corridors as clean as possible at all times. .... 9. Basements - Shall clean and sweep basements once each week."

The interpretation of these rules as they affect the physical education and athletic facilities is very loosely applied in some instances and in other cases quite meticulously applied; hence, the variation of credit for this item for both boys' and girls' program.

Recapitulation

A composite score of all the instructors and coaches is shown on page 9.

The total score of the physical education program, evaluated according to individual instructors, shows a range from 670 to 1300 of a possible 2,000 points, having a mean of 1,042 points.

The total score of the athletic program, evaluated according to the boys' and girls' program in each school, showed a range from 741 points, credited to a junior high school, to 1,394 points. The

mean total score for all schools was 1,047 points. The maximum score is 2,000 points.

Graduates of specialized three-year colleges without bachelor's degrees compared favorably with graduates of four-year colleges who did not major in physical education. Eight teachers received less than 350 points under item I., Instructional Staff, which has a maximum point value of 600 points. Fourteen of the eighteen teachers surveyed received less than 75 per cent of the maximum score of 600 points because they had no degree or they did not major in physical education, showing a definite need for in-service training.

Item II, Facilities, shows a wide range, in Worcester, having a range from 3 to 290 points—one school having no indoor or outdoor facilities to three schools which have fairly good indoor facilities for both boys and girls. All schools lack outdoor facilities with the exception of the two junior high schools whose potential outdoor facilities are not fully developed.
CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS BASED UPON THIS RESEARCH

I. The training of the instructional staff is more vital to a good physical education program than any other single factor. The selection of physical educators in Worcester, in the past, has not been influenced too much by this important item. Only one man and four of the women instructors have even approached the maximum qualifications of one year beyond a master's degree with a major in physical education for men and a bachelor's degree with a major in physical education for women instructors on the high school level.\(^1\)

The Director of Physical Education has a bachelor's degree but no major, or minor, in physical education.

II. All newly appointed men physical education teachers in the high schools should have a master's degree with a physical education major; all newly appointed women instructors at this level should have a bachelor's degree with a physical education major.

III. The dual-directorships—one Director of Athletics and one Director of Physical Education—should be reestablished with emphasis placed upon training for the important position of Director of Physical Education. The present Director of Physical Education, who

was originally appointed Director of Athletics, warrants his reappointment as Director of Athletics because of his experience. Through this act by the School Committee, the physical education program in Worcester should attain a high standard within the limitations of present instructor and facility failings. Improvements in these weaknesses will depend very much upon the proper guidance, supervision, and organizational knowledge of the Director of Physical Education.

IV. The Elsbree "incentive" plan should be adopted to induce better qualified teachers to seek employment in Worcester and also to give full remuneration to present teachers who have attained and will attain higher training. Otherwise, physical educators with higher qualifications will accept positions in other school systems having a higher salary scale.

V. The facilities have a direct effect upon program organization and program activities. With the exception of three secondary schools in Worcester, the indoor facilities are inadequate. The outdoor facilities are lacking due to limited space around the four senior high schools. The two junior high schools have sufficient space which should be developed to its full capacity. As outdoor facilities are more important to the physical education program for high school boys than are indoor facilities, all possible means should be taken to provide outdoor space adjacent to, or nearby, all of the high schools. This space should be fully developed and
equipped.

VI. Indoor facilities should be improved and supplemented to include play sheds or extra rooms for exercise, apparatus, corrections, health units, and sufficient shower rooms. Portable buildings could be used during the emergency, or until better permanent facilities can be provided. These additions should be used for desirable types of activities as well as enabling the establishment of a more intensive intramural program.

VII. The program organization in Worcester is very weak due to lack of facilities in some schools while in schools which have better facilities this misgiving is due to poor program organization or failure of curriculum makers to recognize individual needs and differences. There is no syllabus or unified lesson plan; rather, each instructor in each school conducts his program as he wills. There should be a syllabus based upon the objectives of physical, emotional, social, and recreational development.

VIII. The use of some type of reliable and valid tests and measurements is recommended to enable classification of pupils of the secondary school level. Emphasis should be placed upon individuals who most need physical education. The number to be included in the physical education program in each school should be only that number for whom a complete program can be made available. It is better to give an excellent program to 100 pupils who are in the
greatest need than to provide a poor program for 500 pupils—a program to which even the pupils jokingly refer as is prevalent now in Worcester. With limited facilities as they are in most of the secondary schools in Worcester, it is not possible to have 100 per cent enrollment, 60 minutes each day. We should provide for those needing it most and as many more as the school facilities will allow. Emphatically, we should be sure that every boy and every girl scheduled for physical education is getting a worthy program which should include a large variety of activities in which the pupils participate extensively.

IX. The following classification, determined through testing, is recommended for pupils in physical education.¹/

A. Grades 7 to 9.

1. Boys: about 15 to 25 per cent of each grade, (based upon valid tests), who are in the lowest bracket should meet daily for individually assigned and directed protective or corrective activities, not depriving these of suitable recreational activities. An example of this procedure is the program described by the author in the December, 1940, issue of Education magazine.²/

2. Girls: similar to (1) above.

3. All other boys in grade 7 meet four or five times

¹/ Frederick Rand Rogers, Fundamental Administrative Measures in Physical Education. The Pleiades Company, Newton, Massachusetts, 1932. Chapter XVI.

weekly for educational activities designed to develop the pupil physically, socially, emotionally, and recreationally through participation in sports, pastimes, and gymnastics carefully supervised to develop citizenship qualities. Cooperation may be learned, fair play taught, sympathy aroused, and charity exercised. Pupils should learn the rules of games, how to play various positions on teams, how to manage, captain, and officiate.

4. All other girls as in (3) above, but with programs definitely adapted to their needs.

5. All other boys in grade 8, meeting four or five times each week to continue the development of knowledge, skills, habits, and attitudes leading to improved physical, social, emotional, and recreational development.

6. All other girls in grade 8 as in (5) above, but with programs even more definitely adapted to feminine needs.

7. All other boys in grade 9, meeting three or four times weekly to continue the development of objectives of physical education.

8. All other girls in grade 9 as in (7) but with activities sharply divergent from those of boys.

9. and 10. Leader's classes. Special classes for both boys and girls to prepare from 5 to 15 per cent of the pupils from the higher scoring levels (on tests) for actual leadership of gymnasium groups and sports teams under the strict supervision of the
teacher in charge, not displacing but aiding the teacher who can give more individual attention where it is most needed.

11. and 12. In grade 9, a small percentage of both boys and girls (five to ten per cent) from the upper level of scoring may be excused from all formal requirements except being required to keep the physical director or teacher informed weekly of the extra-curricular physical activities in which they engage.

13. Boys in grades 10 to 12 who are in the lowest test group meet daily for individually assigned and directed protective or corrective activities not omitting recreational activities. This group will range from five to twenty per cent of each grade depending upon the success of corrective activities in grades 7 to 9.

14. Girls as in (13) above.

15. From ten to thirty per cent of boys from the second lowest test group in grades 10 to 12 meeting three times weekly for intramural or interschool practice or games. As far as possible, the time for and type of activities should be left to the individual pupil. He may wish to attend a corrective class the seventh period one day and a game at three o'clock the next day, or practice regularly with an interschool sports team. The chief requirements are that: (a) activity schedules be approved; (b) attendance records be kept; and (c) recorded attendance be three times weekly.

16. Girls as in (15) above.

17. Boys in the second highest level as in (15) above
except that the requirements be that: (a) activity schedules be approved; (b) attendance records be kept; and (c) recorded attendance be twice weekly. This group will consist of between twenty and forty per cent of each class.

18. Girls as in (17) above.

19. All other boys, about ten to forty per cent, in the highest test group are required to have: (a) activity schedule planned by individual and approved by the physical director or instructor; and (b) pupils make weekly report to instructor (or director) concerning their activities which are electives.

20. Girls as in (19) above. The difference of treatment of pupils in groups 15 and 17 and in 16 and 18 is so slight that they may be combined in which case there are only three major divisions of grades 10 to 12 for each sex.

It can be readily observed that this program meets the educational principle of individual differences by using a sound, objective measure and by providing a suitable activity program for each group.

It is true that much effort, time, and little money is needed to establish and carry on such a program. Hard work and much time is required of the physical education teachers by conducting tests, arriving at scores, correcting deficiencies brought out through the tests, follow-up procedures with school and family physicians, nurses, parents, and classroom teachers, retesting to measure progress of the program, as well as supervising the activity program. Administration
adjustments will be necessary, but once the program is established the fulfillment of the highest educational standards will have been reached.

Caution should be exercised. Such a program should not be attempted in every grade in every school the first year. It is suggested that:

1. The first year shall include the testing, scoring, and classifying of all ninth grade pupils.

2. In the first year, as time will allow, testing, scoring, and classifying as many eighth and then seventh grade pupils as possible.

3. The second year (a) retesting all pupils previously tested, and (b) as well as all ninth grade pupils not previously tested. This will mean that all ninth and tenth grade pupils will have been tested once or twice.

4. Again, test as many eighth and seventh grade pupils as time will allow, in second year.

5. In third and fourth years repeat as in (3) and (4).

6. After the fourth year all high school and some eighth and seventh grade pupils will have from one to four scores.

After pupils have been tested, scored, and classified, they are placed in the redirected program according to the group in which their scores classify them.

X. Credit and grades should be given for those pupils who are
included in this redirected physical education program. The marks should correspond to the method of marking used in each respective school. If the school is using the single mark method, that is the one to be used in physical education; if the more comprehensive report card is used, this should be the procedure used by the physical educator. For participating in a program as intensified as that prescribed above a pupil should receive credit toward graduation.

XI. A departmental library should be established and instructors encouraged to study books in the fields of education and physical education. The rotary method of passing these books from school to school would afford opportunities and create an interest on the part of instructors to educate and reeducate themselves professionally.

XII. Supervision should become a helpful aid to instructors. With the type of Director of Physical Education as recommended above in III and the program advocated in recommendation IX, better methods, more encouragement of initiative, improved teaching, a more democratic spirit, and definite standards will prevail.

XIII. Adjustments in schedules of physical educators who are coaching athletic teams should be made. During the seasons a physical educator is actively coaching, schedule considerations should be made and teacher-load credit given for practice and game time actually spent. The teacher-load standard, in assigned time, is 1400 minutes per week. This standard should include coaching time as well as time spent in physical education. Whenever this maximum is exceeded, proper
renumeration should be made; it should not be exceeded whenever possible. Coaches, receiving full recognition for time devoted to coaching, will thus have no antipathy, will have more interest, and will do a higher type of work. Time spent in practice and the place of practice should be scheduled, and a copy of this schedule should be in the office of the Director of Athletics and the Director of Physical Education.

XIV. The standard pattern for the average daily, weekly time devoted to practice and the average daily, weekly division of practice into fundamentals, scrimmage, signals, and lecture should be followed. This technique will insure the objectives of physical, social, emotional, and recreational development through improved skills.

XV. The morale of the athletic teams will be improved through the technique used in recommendation XIV because the team members will realize that their coach is doing a conscientious work using approved methods and that any failure to win games is through no fault of this accepted procedure.

XVI. The coach should strive more toward a closer fellowship with his squad members by becoming more interested and understanding of each player's interests through conferences, social contacts, and extra-curricular activities other than athletics.

XVII. Medical service and player protection through insurance should be continued and more closely supervised so that the welfare of all athletes is, at all times, protected.
XVIII. Being fully recognized as scheduled activity for the coach, as recommended in XIII, the coach should keep an individual, accumulative record of each player which should include his performance record, attendance at practice, conditioning, sportsmanship, and other vital data.

XIX. Scheduling of games, control of athletic monies, equipment purchasing control, hiring of game officials, and the athletic budget for the year should all be under the direct control of the Director of Athletics.

XX. Sanitation of and mental hygiene in the dressing room should be under the constant guidance of each coach. The coach should be with his squad members all of the time that they are using the school facilities. This will afford him numerous opportunities for meeting the social contact requirement as recommended in XVI as well as improving the mental hygiene of his squad members.
Further Research Needed

I. The physical education program as it is conducted in the 56 public elementary schools of Worcester would make a constructive and intensive research project.

II. The effect of personal contact of the athletic coach upon the physical, social, emotional, and recreational development of the secondary school pupil would make an interesting and worthy contribution to physical education and athletics.

III. Can corrective exercises be judiciously used without the highest cooperation between school physicians, school nurses, orthopedic specialists, and the physical education teacher who has had intensive bio-physiological training?

IV. One of the most urgent needs in physical education is a crystallization of known tests and measures or the formation of new tests having a higher validity, reliability, and correlation with a shorter time element than the tests of today. Electronic development may lead to better testing in physical education.
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