

PHYSICAL EDUCATION IN THE PUBLIC HIGH SCHOOLS
OF NEW MEXICO'S CITIES WITH OVER 5000 POPULATION IN 1947-1948

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OF NEW MEXICO'S CITIES WITH OVER 5000 POPULATION IN 1947-1948

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PREFACE

The high schools in the cities of over 5000 population were selected because the writer is presently employed in such a city and wanted to find out how his school compared with the other schools of similar size. The study was concerned with the physical education facilities, instruction, and the program.

The questionnaire method was used with personal interviews and observations as follow up measures.

ACKNOWLEDGMENT

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Especial thanks are due the physical education directors and coaches who so willingly completed the questionnaires making this study possible.

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INTRODUCTION

Since physical education was first introduced as a regular part of the curriculum, its development has rapidly progressed in the high school program. In viewing the country as a whole one is able to see that physical education has made rapid progress during the past three decades along important lines such as legislation, finance, curriculum construction, teacher preparation, facilities, time allotment, and teaching staff. This development has been shaped largely by social influences which have been dominant during that period, and by the programs of physical education in foreign countries, the philosophical and psychological theories held by educational leaders, the war spirit at different periods, and movements such as the playground movement and the widespread interest in camping.¹

When programs of physical education began in the schools of America they consisted largely of formal gymnastics with a few games of low organization. Later, competitive athletics monopolized the program of physical education to the extent that it was the general conception of the public that a school with a good football team had a satisfactory physical education system. Our third step, or our up-to-date program of physical education, includes a wide variety of activities so that all may find interest and skills in which to participate.

Theodore Roosevelt, Jr. once said, "Every little boy has inside of him an aching void which demands interesting and exciting play. And if you don't fill it with something that is interesting and exciting and good for

¹ Jackson R. Sharman, Modern Principles of Physical Education, p. 16.

him, he is going to fill it with something that is interesting and exciting and isn't good for him."² Perhaps this explains why physical education should be required in the curriculum of our high schools at the present time.

The total length of time spent in the high schools of today is much greater than it was thirty years ago; therefore, to keep up our academic standards the students must be provided with an outlet that can be gained best through physical activity. Physical education has been defined as the administrative or teaching division of education that is concerned with the vigorous total body activities as distinct from the manual, musical and science activities and the tool subjects.³ Not only does participation in athletic activities benefit the individual student while attending school, it has a definite carry-over value for later life.

New Mexico is one of the younger of the forty-eight states, hence education in respect to administration and facilities is yet in the process of development. New Mexico is distinctly a rural state, having only six cities with a population over ten thousand. For this reason the state has plenty of room to take care of the families that are moving westward. As the state continues to develop so will education and facilities. Williams suggests that each high school have at least ten to twelve acres in the school site.⁴ This is readily possible due to the vast acreage and the sparse population, if measures are taken to set aside the land while it is still available.

² Ibid., p. 19.

³ Jay B. Nash, The Administration of Physical Education, p. 29.

⁴ Jesse F. Williams, Principles of Physical Education, p. 342.

The need for adequate physical education training is great in New Mexico. The curriculum of the schools devotes itself almost entirely to the development of the mind with little emphasis placed on physical education; or, in other words, the development of the whole child. The rapid increase in population in New Mexico leaves inadequate play areas and gymnasias that are far too small to accomodate the students. As a result of this overcrowding students are necessarily restricted in participation in activities.

In consideration of the conditions now existing, the writer has conducted this study of the high school physical education facilities in the cities of over five thousand to ascertain whether or not the facilities are adequate to carry out a well-balanced physical education program. The facilities of the schools have been evaluated by the standards set up by eminent authors.

That this study may be helpful in solving the problems confronting educators in New Mexico regarding present physical education needs and those to be met in the future is the earnest desire of the writer.

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PROCEDURE

In order to make this study, the questionnaire method was used. After the questionnaires were returned, many of the schools were visited to see how nearly these data conformed to the actual facilities and programs. A stamped and return addressed envelope was enclosed with each questionnaire. As the writer was acquainted with most of the physical education directors, a personal letter accompanied each questionnaire.

To determine the size of various cities, the Clovis Chamber of Commerce was consulted. It was found that 17 cities were of 5000 population or over. The questionnaire was mailed to each of the cities and all of them were completed and returned.

Tables were then made. The facility appeared in the same order in the table as the question and units appeared in the questionnaire.

After the final tabulation, each column was totaled and the percentage was found by dividing the total number of schools used into the number of schools which had the facility in question. The percentages in the tables were carried three places past the decimal point. For simplicity, if the fraction was over one half, the whole number was raised one point and if the fraction was less than one half, it was omitted and the whole number used. For example, .156 per cent would have been recorded as .16 per cent, or .154 per cent would have been recorded as .15 per cent.

The following is an alphabetical list of the cities of over 5000 population with the name and enrollment of the high school during the school year of 1947-1948.

<u>City</u>	<u>Name of High School</u>	<u>Enrollment</u>
Albuquerque	Albuquerque High School	2650
Artesia	Artesia High School	407
Carlsbad	Carlsbad High School	800
Clayton	Clayton High School	410
Clovis	Clovis High School	550
Deming	Deming High School	400
Gallup	Gallup High School	250
Hobbs	Hobbs High School	425
Las Cruces	Las Cruces Union High School	625
Las Vegas	Las Vegas High School	500
Portales	Portales High School	415
Raton	Raton High School	600
Roswell	Roswell High School	650
Santa Fe	Santa Fe High School	750
Silver City	Teachers' High School	369
Socorro	Socorro High School	270
Tucumcari	Tucumcari High School	400

A copy of the questionnaire is found on pages 6 to 11 inclusive.

QUESTIONNAIRE

Name of High School _____ City _____

Population of City _____ Number of pupils in high

school _____ Is Physical Education required? Yes No

Directions for scoring:
Circle "yes" or "no" or
check (V) correct blanks.

I. Gymnasium

A. Location of Gymnasium

1. Is the gymnasium located in a wing of the building?
Yes No
2. Is the gymnasium located on the ground floor?
Yes No
3. Does the gymnasium have a southern exposure?
Yes No

B. Number of Gymnasia

1. Are there separate gymnasia for boys and girls?
Yes No
2. What is the average class size? _____

C. Size and Height of Gymnasia

1. Are the dimensions of the gymnasium 40' x 60' _____
50' x 80' _____, 60' x 90' _____, or larger _____?
2. Approximate height of ceiling is 18' _____, 20' _____,
25' _____?

D. Lighting

1. Are there both natural and artificial lighting?
Yes No
2. Are the two long sides of the gymnasia exposed to
light and air? Yes No One side? Yes No
3. Is window area over 25% _____, 20% _____, 10% _____, of
floor area?
4. Is there a skylight? Yes No

E. Walls and Doors

1. Are the walls hard and smooth to a height of 10 to 12 feet?
Yes No
2. Material used was plaster _____, glazed brick _____,
wood _____, plain brick _____?
3. Are walls thick enough to support apparatus?
Yes No
4. Corners of walls are rounded _____, square _____?

5. Are the doors leading from gymnasium to locker rooms the single type _____, double _____?
6. Is glass in doors shatter proof? Yes No
7. Is the glass covered with a screen of some sort? Yes No
8. Are there sufficient exits to permit a rapid flow of spectators? Yes No

F. Floors

1. Is there a subfloor? Yes No
2. Top floor is made of maple _____, birch _____, hard pine _____, oak _____, small wooden blocks _____?
3. Are these boards tongue and grooved? Yes No
4. The top dressing used is linseed oil _____, wax _____, varnish _____, or left in natural state _____?
5. Are there any obstructions on the playing area? Yes No

G. Bleachers

1. What is the seating capacity of bleachers? _____
2. Are they temporary _____, permanent _____?
3. Made of wood _____, brick _____, cement _____, metal _____?
4. Are they placed at least three feet from play area? Yes No

H. Ceiling, Heating, Ventilation

1. Is ceiling constructed of a porous material? Yes No
2. Type of heat is steam _____, hot water _____, hot air _____?
3. Are any radiators located near play area? Yes No
4. Is temperature regulated by thermostatic control? Yes No
5. Do you have both mechanical _____ and natural means of ventilation?
6. Ventilators are located above _____, below floor _____?
7. Windows are of the pivot type _____, ordinary _____, casement sash _____?

I. Drinking Fountains

1. Drinking fountains are placed in gymnasium _____, locker room _____, hallway _____?
2. There are 2 _____, 4 _____, 6 _____, near gymnasium.

J. Apparatus and Storage Rooms

1. Are the apparatus and equipment storerooms located adjacent and on the same ground level of gymnasium? Yes No
2. There are 100 _____, 200 _____, 300 _____, 4 _____, square feet of storage space.
3. Are there steel _____, wood _____ cabinets in store room?
4. Rooms are locked _____, open _____ when not in use?

II. Service Facilities

A. Dressing Rooms

1. Dressing rooms are located beneath _____, above _____, adjacent _____, to the gymnasium?
2. Is there a direct passage way from gymnasium to dressing room? Yes No
3. Dressing rooms are large enough to provide space equal to 10 _____, 12 _____, 14 _____ square feet per pupil for the largest number dressing in any one class period?
4. Shape of the locker room is square _____, round _____, rectangular _____?
5. Floors are made of tile _____, cement _____, brick _____, wood _____?
6. Are these floors heated in any way? Yes No
7. Walls are made of brick _____, cement _____, tile _____?
8. They are painted a light color? Yes No
9. Are radiators or pipes covered? Yes No
10. Are windows placed 4 _____, 5 _____, 6 _____, feet above the floor?
11. Is there a sufficient amount of artificial light? Yes No
12. Do you have a mechanical ventilating system? Yes No
13. Can windows be raised or lowered? Yes No
14. The locker system used is individual _____, basket _____, or the box locker?
15. Are there sufficient benches _____, mirrors _____, located conveniently in the dressing room?

B. Shower Room (Boys)

1. Is the shower room adjacent to the locker room? Yes No
2. Is it within easy access to gymnasium _____, toilet facilities _____, lavatories _____, swimming pool _____?
3. Are the boys' showers the gang type _____, individual type _____?
4. If the showers are gang type, are there 10 _____, 12 _____, 14 _____, more _____, square feet for each shower head?
5. Floor is made of tile _____, cement _____, brick _____?
6. Is it covered with a non-slip material? Yes No
7. Does it have adequate drainage? Yes No
8. Walls are made of tile _____, cement _____, brick _____?
9. Are walls and ceiling a light color? Yes No
10. Are wooden doors and window sash covered with copper? Yes No
11. Are radiators and steam pipes covered? Yes No

C. Shower Room (Girls)

1. Are shower facilities for girls the same as for boys?
Yes No
2. If dressing booths are provided for girls, are the showers adjacent? Yes No
3. Is the window area at least 20% of area of shower room? Yes No

D. Team Room

1. Is there more than one dressing room with regard to visiting teams? Yes No
2. Do they use girls ____, boys ____ dressing room?

E. Sanitary Features

1. Is there an entrance to toilet room from showers as well as locker room? Yes No
2. Is there outside light? Yes No. Tile floors? Yes No Tile walls? Yes No All cement? Yes No
3. Is there one toilet for each 10 ____, 15 ____, 20 ____ girls in largest class?
4. Is there at least one toilet and one urinal for each 25 boys in the largest class? Yes No
5. Is there one lavatory for each 20 boys or girls? Yes No

III. Departmental Offices

A. Physical Director's Office

1. Is there an office for men ____, women ____?
2. Are they situated so as to permit the directors to supervise the gymnasium? Yes No
Locker room. Yes No
3. Is there a desk? Yes No Filing cabinet? Yes No
First-aid cabinet? Yes No Storage lockers? Yes No
Shower facilities for the instructors? Yes No

B. Examination Room

1. Is gymnasium equipped with one or more rooms?
Yes No
2. Is there adequate light, heat and ventilation?
Yes No
3. Is it equipped with a single hospital bed?
Yes No
4. Are toilet facilities available? Yes No

IV. Instructor

A. Requirements

1. Has a B.S. ____, B.S. in Education ____, A.B. ____,
M.S. ____, M.A. ____ degree?

2. Have you had graduate work in the past five years?
Yes No
3. Is your degree in physical education? Yes No
4. Do you have 2 ____, 4 ____, 5 ____, 6 ____, classes in physical education per day?
5. Do you teach any academic classes? Yes No
Number taught is 1 ____, 2 ____, 3 ____, 4 ____
6. Is there more than one instructor for boys? Yes No
Number ____, For girls ____?

V. Other Facilities

A. Stadium

1. Is the stadium located within walking distance of the gymnasium? Yes No
2. Do physical education classes use the stadium?
Yes No
3. Is there a dressing room at the stadium?
Yes No
4. Bleachers are made of wood ____, concrete ____, brick ____, stone ____?
5. What is the approximate seating capacity? _____
6. Is the stadium used for other activities besides football and physical education classes? Yes No
7. Is there a summer program conducted at stadium?
Yes No
8. Is stadium equipped with lights? Yes No
9. Is there a track in stadium? Yes No
10. The track is surfaced with cinders ____, dirt ____.

B. Play Areas

1. Are play areas within easy access to the gymnasium?
Yes No
2. You have $\frac{1}{4}$ ____, $\frac{1}{2}$ ____, 2 ____, more ____, acres of play areas.
3. They are surfaced with grass ____, dirt ____, cement ____, asphalt ____?
4. Is there proper drainage? Yes No
5. Do boys and girls use same play areas? Yes No
6. Does the community use these play areas? Yes No
7. Have provisions been made for spectators? Yes No
8. Is some of the area free from obstructions such as trees, etc.? Yes No

C. Swimming Pool

1. Is there a swimming pool at the school? Yes No
2. If so, give dimensions. _____
3. Is there a public pool in the locality? Yes No
4. Does the school use this pool in their physical education program? Yes No

D. Additional Comment

VI. Program

A. Types

1. Is physical education a requirement toward graduation?
Yes No One year ___ two years ___
more ___ required?
2. Are intramurals a part of or conducted by the physical education department? Yes No
Number of boys ___ girls ___ participating in these programs.
3. Check the activities carried on in the physical education classes during the school year:

FALLWINTERSPRING

- | | | |
|--------------------------|-------------------|--------------------------|
| 1. Touch football ___ | 1. Volleyball ___ | 1. Track ___ |
| 2. Softball ___ | 2. Tumbling ___ | 2. Softball ___ |
| 3. Soccer ___ | 3. Basketball ___ | 3. Boxing ___ |
| 4. Archery ___ | 4. Wrestling ___ | 4. Dancing ___ |
| 5. Volleyball ___ | 5. Boxing ___ | 5. Achievement tests ___ |
| 6. Achievement tests ___ | 6. Ping-pong ___ | 6. Horseshoes ___ |
| 7. Tumbling ___ | 7. Badminton ___ | 7. Archery ___ |
| 8. Mass games ___ | 8. Kick-ball ___ | 8. Mass games ___ |
| 9. Ping-pong ___ | 9. Dancing ___ | 9. Volleyball ___ |
| 10. Marching ___ | 10. Quoits ___ | 10. Basketball ___ |

Other games played but not listed.

4. Do you have climbing rope ___, ladders ___, horses ___, bucks ___, parallel bars ___, horizontal bars ___, spring board ___, mats ___, rings ___?
5. Is there an indoor track? Yes No
6. Are any provisions made for handicapped children?
Yes No
7. Are certain physical education uniforms required?
Yes No
8. Is instruction in first aid given?
Yes No

VII. Additional Comments

RECOMMENDED BASIC STANDARDS

In evaluating the physical education facilities in the high schools of New Mexico and to determine to what extent the facilities provided conform to the standards that have been set up by educators interested both in physical education and the planning of school buildings, the following criteria, selected from books, magazines, and pamphlets written by those who have attained leadership in this field were used in this study and the results compared.

Although there is dissension among these educators, there is sufficient agreement to set up the following standards that would make a well-rounded program possible in the state of New Mexico.

PHYSICAL EDUCATION FACILITIES

I. Gymnasium

A. Location

The best place for the gymnasium is in a wing of the building and on the ground floor. This facilitates the passing of classes to and from the gymnasium. This plan enables the gymnasium to be used for community functions without interfering with other parts of the school. A direct southern exposure is desirable because of the ¹ greater amount of sunshine which may be obtained.

B. Number of Gymnasia

When enrollments in high school are planned above 800, separate gymnasiums for boys and girls should be provided. Two gymnasiums may even be necessary in schools from 500 to 700 depending upon the kind of health program which is being advanced.²

¹ Jesse F. Williams, and Clifford L. Brownell, The Administration of Health and Physical Education, p. 337.

² G. D. Strayer and W. L. Engelhardt, Standards for High School Buildings, p. 70.

C. Size and Height of Gymnasium

The gymnasium room may have dimensions of 40 feet by 60 feet. A larger floor space, 50 feet by 80 feet is preferred. The height of gymnasium should be 18 feet under all beams and trestles. Where two gymnasiums are planned it frequently is desirable to so locate them that they may be thrown into one gymnasium for public games.³

D. Lighting

Whenever possible windows should be inserted in the two long sides of the gymnasium, but not on the ends. The ratio of window space to floor area is the same as for classrooms, i.e., one fourth to one fifth. Skylights are not altogether satisfactory. Windows of the pivot or louvre type are rapidly supplanting the ordinary casement sash.⁴

E. Walls

It is essential that the walls of the gymnasium be hard and smooth up to a height of from 10 to 12 feet from the floor. Above the 10 or 12 feet the wall should be constructed of some material which will decrease noise and sound reverberation.⁵

F. Floors

There seems to be some difference of opinion as to whether pine blocks on end, cork, or hard maple furnish the best surfacing. From the standpoint of the gymnasium activities probably cork is the best. Considering the floor from the standpoint of intensive use not only for the strenuous activities but for the evenings recreation groups probably hard maple is best. This should consist of an inch and a quarter maple laid over tar paper and common pine seven-eighths of an inch laid diagonally. The floors should be treated with fire proof liquid after which they should be saturated with boiled lin-

³ Ibid., p. 70.

⁴ Jesse F. Williams and Clifford L. Bromell, loc. cit., p. 345.

⁵ Ibid., p. 342.

seed oil. The floors should be polished with light non-oil wax.⁶

G. Bleachers

Where indoor bleachers are a necessity an additional space of 15 feet wide should be required in the length of the gymnasium. Movable bleachers have been satisfactory but from the standpoint of safety and convenience bleachers which fold up to the wall are much better.⁷

The planning of seating space for spectators at public games should be given very careful attention. Where two gymnasiums may be thrown into one, the location of the spectators' gallery so that the galleries of the gymnasiums may be combined into one is desirable. Where the gymnasiums are placed separately, one gymnasium may be provided with a spectators' gallery for the public games. Additional seating space should be planned when possible upon the main floor of the gymnasium. In planning spectators' galleries durable fire proof construction is preferred.⁸

H. Ceiling, Heating and Ventilation

The ceilings should be constructed of some porous material which will favor proper acoustics. Sometimes the ceiling must support swinging apparatus, running tracks, or the visitors' gallery and provision for them must be made in the original plans.⁹

In cold weather the gymnasium must be heated to a temperature of about 50° to 55° F. Steam or hot water heat is best, although hot air may prove satisfactory if it is washed and recirculated. The practice of placing radiators on the floor has been abandoned in favor of locating them underneath the balcony or along the wall at a height of 10 or 12 feet. The temperature of

⁶ Jay B. Nash, The Administration of Physical Education, p. 217.

⁷ Ibid., p. 224.

⁸ G. B. Strayer and H. L. Engelhardt, Loc. Cit., p. 72.

⁹ Jesse F. Williams and Clifford L. Brownell, Loc. Cit., p. 343.

gymnasiums should be regulated by thermostatic control.¹⁰

Proper ventilation may be obtained by mechanical or natural means. As a general rule forced ventilation is superior to the open window method, although in large gymnasiums both methods are employed frequently. Ventilators should be located above the floor so as not to interfere with the activity program.¹¹

I. Drinking Fountains

Drinking fountains are an essential part of gymnasium equipment. Sometimes the mistake is made of placing them in a corner or along the side of the room. The best place for drinking fountains is in the locker room or just outside the gymnasium in a corridor or hallway.¹²

J. Apparatus and Storage Rooms

- a. First level--Adjoining each gymnasium on same floor level with double door opening for piano, mats, apparatus. Approximately 200 square feet; outside windows. Separate provision for storing portable bleachers.
- b. Second level--As in (a) except bleachers are stored with apparatus.
- c. Third level--Storage room located on different level from that of gymnasium floor, or separate from it by passage way or corridor.
- d. Fourth level--Only storage space under overhanging gallery.
- e. Fifth level--Room 10 feet by 10 feet or less. Too small for large apparatus or seat storage.¹³

¹⁰ *Ibid.*, p. 344.

¹¹ *Ibid.*, p. 345.

¹² *Ibid.*, p. 345.

¹³ Herbert Blair, Physical Education Facilities For the Modern Junior and Senior High School, p. 65.

II. Service Facilities

A. Dressing Rooms

Area to be used for dressing purposes: large enough to provide space (exclusive of lockers) equal to 12 square feet per pupil for the largest number dressing in any one class period. Adequate light, heat, ventilation, and sanitation; floor at or above ground level. Dressing room not to be placed under other floor areas unless, for unilateral lighting, the width of the room is not over twice the distance from the window tops to the floor; dressing room built in one story and with skylights in ceiling preferred.¹⁴

B. Shower Rooms

a. Boys

Adjacent to locker room, easy of access from gymnasium, swimming pool and athletic field, separate from but adjoining locker room; 14 square feet of floor area for each shower head. One shoulder height shower for each four boys in largest class. Non-slip tile floor and marble or tile walls, 20 per cent window area, copper covered frame and sash. Adequate ventilation and drainage.¹⁵

b. Girls

Easy of access from gymnasium, swimming pool and athletic field. Separate dressing booth and shower for each girl in the largest class. Shoulder high showers arranged in rows under control of instructor with exhaust heads above each double row of showers. Non-slip tile floors, marble partition walls, 20 per cent window area, copper covered frame and sash. Adequate heat, ventilation and drainage.¹⁶

¹⁴ N. P. Neilson, Score Card For Evaluating Physical Education Programs, p. 14.

¹⁵ Herbert Blair, Loc. Cit., p. 66.

¹⁶ Ibid., p. 66.

C. Team Room

There is no sound reason why separate locker rooms should be planned for athletic teams if a sufficient number of large lockers capable of holding football or baseball equipment is provided. Visiting team rooms are condemned.¹⁷

D. Sanitary Features

Entrance to toilet room from shower as well as locker room. Outside light, tile floors and walls. One toilet for each 15 girls in largest class. One toilet and one urinal for each 25 boys in largest class. One lavatory for each 20 boys or girls.¹⁸

III. Departmental Offices

A. Physical Director's Office

The efficient administration of the physical training department depends in large measure upon the location of the offices of the physical directors in relation to the rest of the rooms of the department. The offices should be easily accessible to the gymnasium, dressing room, examination room and athletic field. Should be so located as to permit view of the gymnasium floor from the directors' office. Equipment should consist of instructor's desk, instructor's and visitor's chairs, filing cabinet, bookcase, first aid cabinet and cabinet for storage of basketballs and other similar gymnasium equipment. Provision should also be made for locker and shower in lavatory for physical director.¹⁹

B. Examination Room

Health unit rooms. This unit should include one or more rooms to be used for first aid, physical examinations, personal health conferences, and by physician, dentist and nurse. One room may serve all these purposes up to an enrollment of 500 boys (girls). Minimum length of exam-

¹⁷ J. F. Williams and G. L. Brownell. Loc. Cit., p. 335.

¹⁸ Herbert Blair. Loc. Cit., p. 67.

¹⁹ G. B. Strayer and H. L. Engelhardt. Loc. Cit., p. 72.

ination room 22 feet. Adequate light, heat, ventilation and sanitation. Equipped with a single hospital bed, hot and cold water, first aid supplies, chairs, desk, sink, city tub, eye chart, full length mirrors, one or more folding screens, files, table, toilet facilities adjoining, closet, cabinets.²⁰

IV. Instructor

A. Requirements

The teaching of physical education at the high school level is distinctly the responsibility of those professionally trained in the work. Other things being equal, the more complete the training of teachers, the more likely the objectives of physical education are to be successfully attained.²¹

B. Teacher Loads

In order that a teacher may do efficient work the assignments for class instruction should not exceed five clock hours or the equivalent class periods per day, or fifteen hundred minutes per week.²²

V. Other Facilities

A. Stadia

Important considerations in stadium design include, determination of the exact size and shape of the playing field, location of seats, economy, available land, land values, comfort and safety. Most stadia are so constructed today that the space beneath the seats may be transformed into team rooms, containing showers, lockers, and toilets; trainer's quarters and equipment rooms.²³

²⁰ N. P. Neilson, Loc. Cit., p. 13.

²¹ Leslie W. Irwin, The Curriculum in Health and Physical Education, p. 165.

²² William R. LaPorte, The Physical Education Curriculum, p. 50.

²³ J. F. Williams and W. L. Hughes, Athletics in Education, p. 253.

B. Play Areas

1. Size of Playgrounds

On account of the importance of play for school children and the probability of the playground being used for community recreation, it is recommended that at least 5 acres of land be secured for elementary schools, 10 to 12 acres for junior high schools, and 20 acres for senior high schools.²⁴

2. Surface

The surface should be as smooth as possible, soft enough to prevent injury when children fall but hard enough so that it is not easily roughened. Grass is the best surfacing material for general purposes, although it is often impracticable on extensively used areas. A surface grade of 6 inches to every 100 feet is sufficient.²⁵

C. Swimming Pools

1. Location of Pool

Indeed, care should be exercised to locate the pool in relation to dressing rooms, showers, and toilets so that the proper routing of bathers may be enforced. Probably the best place for the pool is on the ground floor in the same unit which contains the showers and locker rooms.²⁶

2. Size and Shape

Standard pools are rectangular in shape at least 60 feet long and from 25 to 30 feet wide. In most secondary schools the depth of the pool at the shallow end is approximately 3 to 4 feet and at the deep end not less than 7 to 8 feet.²⁷

²⁴ J. F. Williams and C. L. Brownell, The Administration of Health and Physical Education, p. 390.

²⁵ Ibid., p. 392.

²⁶ Ibid., p. 368.

²⁷ Ibid., p. 369.

VI. Program

The program is divided between core and elective divisions, each school to select those from the two divisions for which it has adequate facilities. It is recommended that each activity be given for at least six weeks continuously, at this level.

It is recommended that the elective program, consisting primarily of the individual carry-over type of activities, constitute at least a third of the total program for the three years.²⁸

A program of definite instruction in activities should be available and required for every student. Allowances should be made for temporary accident or illness, assignment to modified or restricted activity, and for after-school athletics during the season. No student, however, should be deprived of activity instruction, even though it must be of a very restricted type; and should never be permitted to substitute clerical work or towel dispensing in place of the physical education class period.²⁹

²⁸ William B. LaPorte, Loc. Cit., p. 31.

²⁹ Ibid., p. 47.

TABLE I
GYMNASIUM FACILITIES

	Number of schools	17	1.00
Location of Gymnasia	Southern exposure	11	.65
	Separate wing from building	5	.29
	Ground level	13	.76
	Below ground level	4	.24
Number	Separate building	4	.24
	One gymnasium	14	.82
	Two gymnasia	3	.18
Size & Height	40 x 60 x 18 feet	4	.24
	50 x 80 x 22 feet	4	.24
	60 x 90 x 24 feet	3	.18
	Larger	6	.35
Light & Windows	Skylight	1	.06
	Over 10% of wall area	5	.29
	Over 20% of wall area	5	.29
	Over 25% of wall area	7	.41
	Natural and artificial lighting	17	1.00
Walls & Doors	Light & air along both sides	12	.71
	Light & air along one side	5	.29
	Common brick	4	.24
	Plaster	7	.41
	Glazed brick	6	.35
	Hard & smooth to a height of 10 ft.	16	.94
	Thick enough to support apparatus	16	.94
Single doors	8	.47	
Double doors	9	.53	

TABLE II
GYMNASIUM FACILITIES (CONT'D.)

	Number of schools	17	%
Floor	Tongue & grooved maple	11	.65
	Tongue & grooved oak	4	.24
	Tongue & grooved hard pine	1	.06
	Cement	1	.06
	Subfloor	14	.82
	Top dressing of varnish	15	.88
	Top dressing of wax	2	.12
Bleacher*	Seat more than half of student body	14	.82
	Seat half of student body	1	.06
	Constructed of wood	8	.47
	Constructed of cement & wood	7	.41
	Temporary	2	.12
	Permanent	13	.76
	Placed three feet from play area	12	.71
Ceiling	Ceiling of porous material	12	.71
Heating	Steam heat	9	.53
	Hot water	1	.06
	Hot air	7	.41
	Thermostatic controled	12	.71
Ventilation	Mechanical ventilation	12	.71
	Natural ventilation	17	1.00
	Ventilators above floor	15	.88
	Pivot-type windows	9	.53
	Ordinary casement sash windows	8	.47

*Two schools did not have bleachers. Three schools used the Junior High gymnasium for interscholastic contests.

TABLE III
GYMNASIUM FACILITIES (CONT'D.)

	Number of schools	17*	\$
Drinking Fountains	Placed in gymnasium	5	.29
	Placed in locker room	1	.06
	Placed in the hall	11	.65
	Two near gymnasium	9	.53
	Four near gymnasium	6	.35
	None	2	.12
	On same ground level as gym.	15	.88
Apparatus & Storage Room	100 sq. ft. of storage space	8	.47
	200 sq. ft. of storage space	6	.35
	300 sq. ft. of storage space	1	.06
	None	2	.12
	Room locked when not in use	14	.82
	Storage cabinets	12	.71

*One school uses the gymnasium for class rooms as a new school is being constructed.

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TABLE IV
SERVICE FACILITIES*

DRESSING ROOMS

BOYS

	Number of schools	17	.8
Location	Above gymnasium	2	.12
	Adjacent to the gymnasium	9	.53
	Beneath gymnasium	5	.29
	Direct passage from gymnasium	13	.76
Size and Height	10 sq. ft. per pupil	10	.59
	12 sq. ft. per pupil	4	.24
	14 sq. ft. per pupil	2	.12
Floors	Rectangular shape	12	.71
	Square	4	.24
	Cement	12	.71
Walls	Wood	2	.12
	Tile	2	.12
	Cement	8	.47
Lockers	Brick	6	.35
	Tile	2	.12
	Painted a light color	16	.94
Misc.	Individual lockers	8	.47
	Basket type	5	.29
	Banks	1	.06
	Box locker	2	.12
Girls	Mechanical ventilating system	9	.53
	Windows 4 ft. above floor	9	.53
	Windows 5 ft. above floor	6	.35
	Same as boys	9	.53
	Not as good	2	.12
	Better	5	.29

*One school does not have service facilities.

TABLE V
SERVICE FACILITIES (CONT'D.)

SHOWER ROOM

BOYS

	Number of Schools	17	§
Location	Adjacent to locker room	15	.88
	Of easy access to gymnasium	14	.82
	Of easy access to swimming pool	1	.06
	Of easy access to toilet facilities	14	.82
	Gang type shower	11	.65
	Individual type shower	5	.29
Floor	Less than 10 sq. ft. of floor space	5	.29
	10 sq. ft. of floor space per head	8	.47
	12 sq. ft. of floor space per head	3	.18
	Tile	3	.18
	Cement	13	.76
	Adequate drainage	12	.71
Walls	Tile	4	.24
	Cement	8	.47
	Brick	4	.24
	Painted a light color	16	.94
	Pines covered	5	.29
	Same as boys	7	.41
Girls	Separate dressing booths	7	.41
	Not as good as boys	2	.12
	Windows 20% of wall area	11	.65
Team Room	Use girls dressing room	7	.41
	Use boys dressing room	1	.06
	Separate room provided	8	.47

TABLE VI
SERVICE FACILITIES (CONT'D.)

	Number of schools	17	5
	Toilet and showers adjacent	13	.76
	Toilet and dressing room adjacent	13	.76
Sani- tary	Natural light	9	.53
	Brick walls	1	.06
	Tile walls	3	.18
	Cement walls	12	.71
Feat- ures	Tile floors	2	.12
	Cement floors	14	.82
	One toilet for each 10 girls	6	.35
	One toilet for each 15 girls	9	.53
	One toilet for each 30 girls	1	.06
	One toilet and one urinal for each 25 boys	12	.71
	One lavatory for each 20 boys or girls	11	.65
	One lavatory for each 30 boys or girls	1	.06
	Without a lavatory	4	.24

TABLE VII
DEPARTMENTAL OFFICES

	Number of schools	17	.5
	Office for men	14	.82
Physical	Office for women	10	.59
	Supervision of gym possible	8	.47
Director's	Supervision of locker room possible	7	.41
Office	Equipped with desk	12	.71
	Equipped with filing cabinet	11	.65
	Equipped with first aid facilities	13	.76
	Shower facilities	6	.35
	One or more rooms	7	.41
Examina-	Adequate Heat	7	.41
tion	Adequate light	7	.41
Room	Adequate ventilation	7	.41
	Equipped with bed	5	.29
	Toilet facilities	5	.29

TABLE VIII

INSTRUCTOR

	<u>Number of Schools</u>	<u>17</u>	<u>§</u>
	<u>Number of instructors in Physical Education</u>	<u>40</u>	
	<u>B. S. Degree</u>	<u>29</u>	<u>.73</u>
	<u>A. B. Degree</u>	<u>5</u>	<u>.13</u>
	<u>M. S. Degree</u>	<u>1</u>	<u>.03</u>
	<u>M. A. Degree</u>	<u>5</u>	<u>.13</u>
Instructors	<u>Degree in physical education</u>	<u>21</u>	<u>.53</u>
	<u>Graduate work in past five years</u>	<u>14</u>	<u>.35</u>
	<u>No. of schools one instructor for boys</u>	<u>12</u>	<u>.30</u>
	<u>Two instructors for boys</u>	<u>5</u>	<u>.13</u>
	<u>No. of schools one instructor for girls</u>	<u>16</u>	<u>.40</u>
	<u>Two instructors for girls</u>	<u>1</u>	<u>.03</u>
	<u>2 classes per day in physical education</u>	<u>7</u>	<u>.18</u>
	<u>4 Classes per day in physical education</u>	<u>16</u>	<u>.40</u>
	<u>5 classes per day in physical education</u>	<u>14</u>	<u>.35</u>
Instructors	<u>6 classes per day in physical education</u>	<u>3</u>	<u>.08</u>
	<u>1 academic class per day</u>	<u>1</u>	<u>.03</u>
	<u>2 academic classes per day</u>	<u>6</u>	<u>.15</u>
	<u>3 academic classes per day</u>	<u>1</u>	<u>.03</u>

TABLE IX
OTHER FACILITIES

	Number of schools	17	.5
	Number of schools having stadia	17	1.00
	Within walking distance of gymnasium	13	.76
	Schools using stadium for physical education	12	.71
	Stadia having dressing facilities	5	.29
	Bleachers are wood	7	.41
	Bleachers are concrete*	6	.35
Stadia	Bleachers are steel	2	.12
	Bleachers are stone	2	.12
	Number holding all of student body	17	1.00
	Summer programs at stadia	8	.47
	Number of lighted stadia	15	.88
	Number having running tracks	13	.76
	Track surfaced with dirt	8	.47
	Track surfaced with cinders	5	.29
	Number of schools having play areas	17	1.00
	Close to gymnasium	16	.94
Play	One acre of play area	2	.12
	Two acres of play area	10	.59
	Four acres of play area	5	.29
Areas	Surfaced with grass	10	.59
	Surfaced with dirt	7	.41
	Number having proper drainage	14	.82
	Number used by the community	11	.65

*One concrete bleacher under construction.

TABLE IX
OTHER FACILITIES (CONT'D.)

	<u>Number of schools</u>	<u>17</u>	<u>.8</u>
<u>Play</u>	<u>Boys and girls using same area</u>	<u>15</u>	<u>.88</u>
<u>Areas</u>	<u>Provisions for spectators</u>	<u>6</u>	<u>.35</u>
	<u>Areas free from obstructions</u>	<u>17</u>	<u>1.00</u>
<u>Swimming</u>	<u>Number of schools having pools</u>	<u>1</u>	<u>.06</u>
<u>Pools</u>	<u>Public pools near school</u>	<u>11</u>	<u>.65</u>
	<u>Schools using public pool in program</u>	<u>4</u>	<u>.24</u>

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TABLE X
PROGRAM

Type			
	Number of schools	17	%
	Required for graduation	15	.88
	One Year	1	.06
	Two Years	10	.59
	More	4	.24
	Intramurals (boys)	13	.76
	Intramurals (girls)	13	.76

FALL		WINTER	
Activity	No. of schools Participating	Activity	No. of schools Participating
1. Touch football	17	1. Volleyball	16
2. Softball	12	2. Tumbling	12
3. Soccer	11	3. Basketball	17
4. Archery	5	4. Wrestling	7
5. Volleyball	16	5. Boxing	15
6. Achievement test	11	6. Ping-pong	8
7. Tumbling	10	7. Badminton	7
8. Mass games	12	8. Kick-ball	8
9. Ping-pong	13	9. Dancing	10
10. Marching	14	10. Quoits	2

SPRING		Equipment	
Activity	No. of schools Participating	Equipment	
1. Track	17	1. Climbing ropes	10
2. Softball	17	2. Ladders	2
3. Boxing	10	3. Horses	6
4. Dancing	10	4. Bucks	3
5. Achievement test	12	5. Parallel bars	6
6. Horseshoes	10	6. Horizontal bars	7
7. Archery	5	7. Spring board	2
8. Mass games	13	8. Mats	16
9. Volleyball	12	9. Rings	2
10. Basketball	11	10. Indoor track	0

Provisions for handicapped children	7	.41
Physical education uniform required	7	.41
Instruction in first aid	14	.82

TABLE XI
PROGRAM (CONT'D.)

	Number of schools	17	.8
	15 - 20	2	.12
	21 - 25	2	.12
Average Class Size	26 - 30	3	.18
	31 - 35	7	.41
	36 - 40	1	.06
	50	2	.12
	75 - 100	4	.24
Intramurals	101 - 125	3	.18
Boys	126 - 150	2	.12
	151 - 175	1	.06
	250 - 300	3	.18
	75 - 100	3	.18
Intramurals	101 - 125	3	.18
Girls	126 - 150	4	.24
	176 - 200	2	.12
	250 - 300	1	.06
	Schools without intramural program	4	.24

CONCLUSIONS AND INTERPRETATIONS

PHYSICAL EDUCATION FACILITIES

Location

More than seventy-six percent of the gymnasias are located on the ground floor. Sixty-five percent of the gymnasias have a southern exposure. Fifty-three percent are in a separate wing from the building or in a separate building. These factors are highly recommended for carrying on a successful physical education program.

Number of Gymnasias

Eighty-two percent of the schools had one gymnasium. The boys and girls classes alternated by days or the floor was divided between the two. Strayer and Engelhardt recommend separate gymnasiums for boys and girls when the high school enrollment is eight hundred or above. Separate gymnasiums are always desirable.

Size and Height of Gymnasium

Over fifty percent of gymnasias are 60 x 90 x 24 feet or larger. In all cases the ceiling was 18 feet or higher. That has been recommended as the minimum height. None of the gymnasias were smaller than 40 feet by 60 feet.

Lighting

All of the gymnasias have both artificial and natural lighting. Seventy-one percent have light and air along both sides of the gymnasium. Seventy percent had from twenty to twenty-five percent of the wall area in windows that could be opened. Only one school reported a skylight in the gymnasium.

Walls

The walls were made of common brick, plaster and glazed brick. Plaster was the most common. Ninety-four percent of the walls were reported as being hard and smooth to a height of ten feet or more and thick enough to support heavy apparatus.

Floors

Eighty-nine percent of the floors were tongue and grooved hard maple or oak. Eighty-two percent of the gymnasias have sub-flooring. In eighty-eight percent of the cases the top dressing of the floor consisted of varnish. These factors have all been recommended by Nash.

Bleachers

In most all cases the bleachers were constructed of wood or of cement and wood. Seventy-six percent were of the permanent type. Seventy-one percent reported that the bleachers were placed at least three feet from the play area. Two schools did not have bleachers in the gymnasias while three schools stated that the junior high gymnasium was used for interscholastic contests. Eighty-two percent of the bleachers will seat over half of the student body and nearly all of them, the entire student body.

Ceiling. Heating and Ventilation

Seventy-one percent have a ceiling constructed of a porous material. This is desirable for the elimination of excess noise. Steam heat, hot water and hot air were the three types of heating used with steam heat being used in the majority of cases. Seventy-one percent had the temperature regulated by thermostatic control. All of the gymnasias had natural ventilation with seventy-one percent having mechanical ventilation.

Drinking Fountains

Sixty-five percent of the schools stated that the drinking fountains were placed in the hallway or in a corridor just outside of the gymnasium. This has been highly recommended by Williams and Brownell.

Apparatus and Storage Rooms

Eighty-eight percent of the apparatus and storage rooms are located on the same ground level as the gymnasias. The majority of the schools had from one hundred to three hundred square feet of storage space. This would place them between the first and second level of Blair's Score Card. Eighty-two percent of these rooms are locked when not in use. Seventy-one percent of these rooms were equipped with storage cabinets.

Service Facilities

Dressing Room

The dressing rooms in fifty-three percent of the schools were located adjacent to the gymnasias while seventy-six percent of them afforded direct passage to and from the gymnasias. Fifty-nine percent of the dressing rooms were large enough to provide space equal to ten square feet per pupil for the largest number dressing in any one class period. Most of the rooms are rectangular in shape having cement floors and walls of a light color in the majority of cases. Individual lockers are used by forty-seven percent of the schools and the basket type in twenty-nine percent. Fifty-three percent have a mechanical ventilating system. In fifty-three percent of the schools, the girls dressing facilities are the same type as the boys. One school did not have any service facilities.

Shower Room

The shower room, in eighty-eight percent of the schools, was located adjacent to the locker room and within easy access to the gymnasium. Eighty-two percent were within easy access to the toilet facilities. Sixty-five percent of the rooms were equipped with the gang type shower. Forty-seven percent had only ten square feet of floor space to each shower head. This is not enough space. Blair recommends fourteen square feet per shower head. Seventy-six percent of the floors were of cement. Forty-seven percent of the walls were of cement but all of them were painted a light color. Seventy-one percent reported as having adequate drainage. The girls facilities were the same as the boys in forty-one percent of the schools while a like number had adjacent dressing booths.

Room Room

The visiting team used the girls dressing room in forty-one percent of the schools while a separate room was provided in forty-seven percent. There is no sound reason for having a separate room, according to Williams and Brownell.

Sanitary Features

Seventy-six percent of the schools have toilets and showers adjacent and the same percent have toilets and dressing rooms adjacent. Only fifty-three percent have natural light. Seventy-one percent have cement walls and eighty-two percent have cement floors. Tile is desirable for both. There is one toilet for each 15 girls in fifty-three percent of the schools and one toilet and one urinal for each twenty-five boys in seventy-one percent of the schools. Most all of these features are far below the recommended basic standards.

Departmental Offices

Physical Directors Office

An office was provided for eighty-two percent of the men directors and in fifty-nine percent of the schools for women. The gymnasium could be supervised from the office in forty-seven percent of the schools and forty-one percent could supervise the locker room. The majority of these offices are poorly equipped. Thirty-five percent of the offices had shower facilities for the instructor. One office was generally used by both the man and woman director. Records were rarely kept of the students in the physical education classes.

Examination Room

Forty-one percent of the schools have an examination room. This number had adequate heat, light and ventilation but were not well equipped. Only twenty-nine percent of the rooms had a cot or bed and a like number had toilet facilities. The examination room is necessary for the success of a good physical education program and each school should have one. Perhaps an improvement of these conditions would tend to raise the health standards in our schools.

Instructor

There is a total of forty instructors, full or part time, in the seventeen schools. A close check of this reveals that in several schools the coach teaches physical education for one or two hours daily. Fifty-three percent of these instructors have their degree in physical education. Thirty-five percent have had graduate work in the past five years. Only sixteen percent had their Masters' Degree. The teaching load was satisfactory in most every school.

Other Facilities

Stadia

All of the schools had a stadium. Seventy-six percent of them were located within walking distance of the gymnasium. Seventy-one percent of those were used by the physical education classes in carrying out their program. Twenty-nine percent of the stadia had dressing facilities as most of the schools used the gymnasium facilities for dressing and showering. Forty-one percent had wooden bleachers while the rest were constructed of concrete, steel, and stone. One bleacher was under construction and would be ready in the fall of 1948. All of these bleachers would seat the entire student body. There is a summer program conducted in forty-seven percent of the stadia. Eighty-eight percent of these stadia are equipped with lights. Seventy-six percent have a running track located in the stadium, the majority having a surface of dirt. All of the schools rate exceptionally high on stadia facilities.

Play Areas

All of the schools had play areas but in every case they were less than five acres. More space should be set aside while it is still available for this purpose. Ninety-four percent of them are close to the gymnasium. Grass is the most common surface with eighty-two percent having adequate drainage. The community uses these playareas in sixty-five percent of the schools. The boys and girls use the same play area in eighty-eight percent of the schools. Thirty-five percent of these areas had provisions for spectators.

Swimming Pool

Only one school had an indoor swimming pool. Sixty-five percent of the schools had a public pool near the school. Twenty-four percent used this public pool in their physical education program. The weather in New Mexico is mild enough during the early fall and late spring that all of the schools could use an out-door pool, even though it was a public pool, in their physical education program. As new high schools are being constructed in the state this factor should be given every consideration.

The Program

Of the seventeen schools, eighty-eight percent require physical education for graduation. Fifty-nine percent require two years while twenty-four percent require physical education every year in high school. Intramurals are conducted in seventy-one percent of the schools for both boys and girls. Team games are emphasized. The programs are not broad enough to meet the needs of the students. Although the gymnasiums are large they are poorly equipped. Forty-one percent of the schools have provisions for handicapped children. The classes are too large for efficient supervision.

RECOMMENDATIONS

In the opinion of the author, the following improvements could be made in physical education for the state of New Mexico:

1. Provide separate gymnasias for boys and girls where ever possible.
2. The service facilities could be greatly improved, especially the sanitary features. It would be hard to teach good health habits or practices with the present existing conditions.
3. Have well equipped departmental offices for male and female instructors. Have them placed where effective supervision would be possible.
4. Every gymnasium should be equipped with one or more examination rooms. As frequent examinations are necessary, this room is essential.
5. More teachers having the necessary physical education requirements are needed.
6. Larger play areas should be set aside while the land is still available.
7. Swimming facilities should be added to give every child an opportunity to learn to swim. Safety instruction could be included.
8. Programs emphasizing activities with a carry-over value should be introduced.

SUGGESTIONS FOR FURTHER STUDY

1. A comparison of physical education facilities with cities of similar size in other states.
2. Compare the private schools of the state with the public ones with regard to facilities, equipment and program.
3. A study of the curriculum in the state colleges with regard to teacher training in the field of health, physical education and recreation.
4. A study of the various recreational facilities in the cities of New Mexico.
5. A survey of all the public high schools in the state to determine the physical education facilities.

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