SURVEY OF PHYSICAL EDUCATION IN
TEXAS HIGH SCHOOLS

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SURVEY OF PHYSICAL EDUCATION IN
TEXAS HIGH SCHOOLS

DISSERTATION

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF EDUCATION

By

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# TABLE OF CONTENTS

LIST OF TABLES .............................................. v

Chapter

I. INTRODUCTION ........................................ 1

Statement of the Problem
Hypotheses
Significance of the Study
Definition of Terms
Limitations of the Study
Basic Assumptions
Selection and Refinement of the Questionnaire
Organization of the Remainder of the Study

II. RELATED STUDIES .................................... 15

Physical Fitness of Youth in the United States
Physical Fitness and Academic Achievement
Physical Education Programs in the United States

III. METHODS AND PROCEDURES OF RESEARCH .......... 36

Procedures for Collecting Data
Procedures for Treating Data

IV. PRESENTATION AND ANALYSIS OF DATA ............ 46

Comparisons between High School Programs and Recommended Minimum Requirements
Comparisons between Large and Small School Programs
Comparisons between Boys' and Girls' Programs
Certain Administrative Practices
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS</td>
<td>100</td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>Conclusions</td>
<td></td>
</tr>
<tr>
<td>Implications</td>
<td></td>
</tr>
<tr>
<td>Recommendations</td>
<td></td>
</tr>
<tr>
<td>APPENDIX</td>
<td>114</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>128</td>
</tr>
</tbody>
</table>
### LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Percentage of Questionnaires Returned by School Class</td>
<td>38</td>
</tr>
<tr>
<td>II. Percentage of Schools Which Met Recommended Minimum Requirements in Each Area Included in Hypothesis I</td>
<td>48</td>
</tr>
<tr>
<td>III. Gymnastic Activities Reported by High School Teachers</td>
<td>53</td>
</tr>
<tr>
<td>IV. Team Sports Reported by the High School Teachers</td>
<td>58</td>
</tr>
<tr>
<td>V. Individual and Dual Sports Reported by the High School Teachers</td>
<td>60</td>
</tr>
<tr>
<td>VI. Comparisons between Large and Small School Programs</td>
<td>65</td>
</tr>
<tr>
<td>VII. Comparisons between Class B Boys' and Girls' Programs</td>
<td>77</td>
</tr>
<tr>
<td>VIII. Comparisons between Class A Boys' and Girls' Programs</td>
<td>79</td>
</tr>
<tr>
<td>IX. Comparisons between Class 2A Boys' and Girls' Programs</td>
<td>82</td>
</tr>
<tr>
<td>X. Comparisons between Class 3A Boys' and Girls' Programs</td>
<td>84</td>
</tr>
<tr>
<td>XI. Comparisons between Class 4A Boys' and Girls' Programs</td>
<td>86</td>
</tr>
<tr>
<td>XII. Physical Education Semester Graduation Requirements Reported by the High School Teachers</td>
<td>91</td>
</tr>
<tr>
<td>XIII. Weekly Class Period Requirements Reported by the High School Teachers</td>
<td>93</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>XIV. Normal Class Enrollment for Physical Education</td>
<td>95</td>
</tr>
<tr>
<td>XV. Use of the Physical Education Period as a Practice Period for Basketball</td>
<td>96</td>
</tr>
<tr>
<td>XVI. Percentage of Schools Which Met the Recommended Minimum Requirements for Fitness Appraisals</td>
<td>124</td>
</tr>
<tr>
<td>XVII. Percentage of Schools Which Met the Recommended Minimum Requirements for the Teaching of Body Mechanics</td>
<td>124</td>
</tr>
<tr>
<td>XVIII. Percentage of Schools Which Met the Recommended Minimum Requirements for Conditioning Exercises</td>
<td>125</td>
</tr>
<tr>
<td>XIX. Percentage of Schools Which Met the Recommended Minimum Requirements for Gymnastics</td>
<td>125</td>
</tr>
<tr>
<td>XX. Percentage of Schools Which Met the Recommended Minimum Requirements for Weight Training</td>
<td>125</td>
</tr>
<tr>
<td>XXI. Percentage of Schools Which Met the Recommended Minimum Requirements for Rhythms</td>
<td>126</td>
</tr>
<tr>
<td>XXII. Percentage of Schools Which Offered a Variety of More Than Three Team Sports</td>
<td>126</td>
</tr>
<tr>
<td>XXIII. Percentage of Schools Which Met the Recommended Minimum Requirements for Individual-Dual Sports</td>
<td>126</td>
</tr>
<tr>
<td>XXIV. Percentage of Schools Which Met the Recommended Minimum Requirements for Track and Field</td>
<td>127</td>
</tr>
<tr>
<td>XXV. Percentage of Schools Which Had Adequate Facilities and Equipment</td>
<td>127</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Physical fitness of American youth has been an area of national concern in recent years. The high rejection rate for physical reasons of young men called for military duty during the Korean War and recent unfavorable reports on the physical fitness of American school children have focused attention on the physical fitness problem. These reports have resulted in a growing concern about the quality of school physical education programs which are primarily responsible for the physical fitness of school children.

National attention was re-focused on this problem in 1961 when President Kennedy, in a presidential message, declared:

The strength of our democracy is no greater than the total well-being of our people. The level of physical fitness of every American citizen must be our constant concern.

The need for greater attention to the physical fitness of our youth is clearly established. Therefore, it is very important that we take immediate steps to ensure that every American child be given the opportunity to make and keep himself physically fit.

Statement of the Problem

The problem of this study was to evaluate the physical education programs of high schools in Texas.
The first purpose of this study was to determine whether the physical education programs of Texas high schools met the recommended minimum requirements of the Texas Education Agency in the following areas:

1. Appraisal of fitness
2. Body mechanics
3. Conditioning exercises
4. Gymnastics
5. Weight training (modified for girls)
6. Rhythms
7. Minimum of two team sports
8. Minimum of two individual-dual activities
9. Track and field

The second purpose of this study was to determine whether the small high schools in Texas were meeting the recommended minimum requirements of the Texas Education Agency to the same degree as large Texas schools.

The third purpose of this study was to determine whether the boys' physical education programs in Texas high schools were meeting the recommended minimum requirements of the Texas Education Agency to the same degree as girls' programs.

Hypotheses

1. Less than 90 per cent of the responding high schools meet the recommended minimum requirements for the following:
A. Fitness appraisals
B. Training in body mechanics
C. Conditioning exercises
D. Gymnastics
E. Weight training
F. Rhythmic activities
G. A variety of more than three team sports
H. Individual-dual sports
I. Track and field
J. Adequate facilities and equipment for a balanced physical education program

2. There is a significant difference between the programs of large and small schools.

A. A significantly greater percentage of large schools have adequate facilities and equipment for a balanced physical education program.

B. A significantly greater percentage of large schools meet the recommended minimum requirements for fitness appraisals, training in body mechanics, gymnastics, rhythmic activities, individual-dual sports, and track and field.

C. A significantly greater percentage of large schools offer a variety of more than three team sports.

D. A significantly greater percentage of small schools meet the recommended minimum requirements for conditioning exercises and weight training.
3. There is a significant difference between the programs of boys and girls.

A. A significantly greater percentage of girls' programs have adequate facilities and equipment for a balanced physical education program.

B. A significantly greater percentage of girls' programs meet the recommended minimum requirements for fitness appraisals, training in body mechanics, gymnastics, rhythmic activities, and individual-dual sports.

C. A significantly greater percentage of girls' programs offer a variety of more than three team sports.

D. A significantly greater percentage of boys' programs meet the recommended minimum requirements for conditioning exercises, weight training, and track and field.

Significance of the Study

Studies by Tinkle (10) and other researchers show that there are wide differences in the quality of physical education programs of high schools of the various states and of individual schools within each state. These differences are as significant among the high schools of Texas as they are in other states. These differences are significant enough
to be of major concern to all educators in Texas, both at the local and state level.

The concern for the physical fitness of Texas youth resulted in the establishment of a two-unit requirement in health and physical education by the Texas Education Agency in 1961. This requirement became effective at the beginning of the 1962-1963 school year. No specific unit requirement existed prior to 1961.

Bulletin 615 (8, p. 201) of the Texas Education Agency outlines the requirements for physical education in high schools. Bulletin 625 (9), a supplement to Bulletin 615, offers certain guidelines. These guidelines are designed to aid all schools, particularly those that have offered only a team-sports program and those that have limited facilities, in organizing a framework of activities in which the entire stress is laid on the development of each individual to his full potential of physical fitness.

Bulletin 625 (9, p. vi) points out that in addition to physical fitness for each individual, a secondary goal will be derived from training in program activities that will carry over into adult life. The bulletin indicates that the inclusion of individual and dual sports in the framework of activities is important in accomplishing this goal.

One of the most important aspects of this new program of physical education is the stress placed on arranging units
in graded progression in terms of continuity, complexity and difficulty of activities. Bulletin 625 (9, p. 2) states that each school should prepare a course of study to ensure progression within the secondary grades and to correlate with the overall instruction at the elementary level. A lack of graded progression and correlation has been one of the greatest weaknesses of high school programs in Texas. Weaknesses of this type are common in many high school programs throughout the United States, as indicated by a number of studies conducted during recent years.

Previous studies in this field have been primarily concerned with measuring the physical fitness of American youth in all geographic regions of the nation with such devices as the California Physical Performance Test and the AAHPER National Fitness Test. Comparisons were made in some studies between the scores of American youth and the scores of youth from other nations on identical tests. However, there have been some studies which were concerned with the quality of physical education programs in American high schools.

Tinkle (10) conducted a survey of the physical education programs in the public high schools of Texas by means of the LaPorta Score Card between 1951 and 1954 and recorded the results in her doctoral study in 1955. She concluded that according to the score card programs in Texas rated poor to
average. She found a wide range in the quality of programs throughout the state. Large schools usually had higher scores; small schools usually had lower scores.

Bookwalter (3, p. 15) summarized the results of over thirty doctoral studies directed by him which were concerned with evaluating the physical education programs of 2648 high schools in twenty-six states between 1950 and 1954. He concluded that according to the LaPorte Score Card general instructional physical education operated at about 50 per cent effectiveness nationally.

A number of researchers have compiled evidence which indicates a need for improvement of physical fitness in many American school children. Hinger (5, p. 363) reported the results of a physical fitness test administered to American and European children in 1954. By comparison it was found that 58 per cent of the American children failed one or more parts of the test while less than 9 per cent of the European children failed.

Hinger (5, p. 364) also reported that scores made by children in various European countries on the AAHPER National Fitness Test since 1959 have been compared with scores of American youth and clearly showed that American youth compared unfavorably in most all cases.

Hutchinson (6, p. 12) conducted an AAHPER survey in 1958 among directors and supervisors of fifty city school
systems. Results of the survey indicated that among lay people, professional physical educators, classroom teachers, and students there existed a conviction of the need for better physical condition among American youth and adults.

Various studies show that physical education is desirable for girls as well as for boys. Bambra (1, p. 12) stated that intellectually able girls will develop more fully if care is taken that the movement aspect of their lives is not neglected. Brouha and Bradford (4, p. 178) found that regular physical activity produced organic changes in the lungs and circulatory system which improved the function for normal living and were protective against stress and strain. Bell (2), in her doctoral study in 1955, observed that girls who played basketball were selected more frequently by their classmates in a sociometric test involving situations of friendship and leadership than were the non-players.

Evidence of this type emphasizes the value of any study that may focus attention on the quality of physical education programs in Texas high schools.

The results of this study could be used by school administrators and supervisors to evaluate the quality of the physical education program in their schools and serve as a guide in improving program quality.
Definition of Terms

1. **High school**—Schools which included grades nine through twelve or grades ten through twelve were considered high schools.

2. **Recommended minimum requirements**—The suggested standards for each of the nine areas of the physical education program that are recommended in Bulletin 615 of the Texas Education Agency.

3. **Appraisal of fitness**—Administering physical fitness tests to each individual at the beginning and end of each school year. The AAHPER Youth Fitness Tests are recommended in Bulletin 615. The AAHPER battery includes tests of cardio-vascular-respiratory endurance and tests of muscular strength and endurance.

4. **Body mechanics**—Fundamental movements of the body.

5. **Conditioning exercises**—These consist primarily of daily calisthenics.

6. **Gymnastics**—Stunts performed on the ground, on mats, or on apparatus.

7. **Weight training**—Exercising periodically with weight lifting equipment. This program is modified for girls.

8. **Rhythms**—Folk and modern dances.

9. **Team sports**—Activities that require more than two people on each team.
10. **Individual activities**—Activities requiring only one person.

11. **Dual activities**—Activities requiring only two people.

12. **AAHPER**—American Association for Health, Physical Education, and Recreation.

13. **Physical fitness**—Soundness of body organs, ability to perform efficiently under exercise or work conditions, and a reasonable measure of skill in the performance of selected physical activities, as measured by the AAHPER Youth Fitness Tests or other standardized tests.

14. **Class 4A school**—Any high school with 950 or more pupils enrolled.

15. **Class 3A school**—Any high school with more than 400 but less than 950 pupils enrolled.

16. **Class 2A school**—Any high school with more than 200 but less than 400 pupils enrolled.

17. **Class A school**—Any high school with more than 115 but less than 200 pupils enrolled.

18. **Class B school**—Any high school with less than 115 pupils enrolled.

19. **Small schools**—Class B and A schools.

20. **Large schools**—Class 2A, 3A, and 4A schools.
Limitations of the Study

This study was limited to the accredited public high schools from which completed questionnaires were received.

In addition, this study was concerned only with an investigation of the physical education programs of Texas high schools during the 1964-1965 school year.

Criteria for this investigation were the recommended minimum requirements of the Texas Education Agency as outlined in Bulletin 615 (8, p. 201).

No attempt was made to suggest remedial measures for a particular school.

Basic Assumptions

It was assumed in this study that:

1. The recommended minimum requirements of the Texas Education Agency were valid criteria for determining whether the high schools of Texas were meeting the minimum requirements of a balanced program of physical education.

2. The questionnaire (Appendix B) would secure the information needed for this study.

3. Physical education teachers and supervisors would provide correct information in sufficient numbers to complete the study.

Selection and Refinement of the Questionnaire

A study similar to this study was conducted during the fall term, 1963. The purpose of that study was to refine
the questionnaire used in this study. A sample of twenty-four high schools was selected in the Wichita Falls, Texas, area and included in that survey. The nine components of the physical education program recommended by the Texas Education Agency were used to construct a tentative questionnaire. The tentative questionnaire was sent to each of these high schools. The results of that survey were used to refine the questionnaire.

To test the reliability of the questionnaire, a retest was given six weeks later to each of the twenty-four teachers of physical education. Percentages of agreement between the test-retest were determined. These ranged from 66 per cent to 100 per cent. Items of the questionnaire with less than 75 per cent agreement were revised.

Data obtained from the pilot study were tabulated and treated statistically in the same manner as the data in this study. The standard error of a sample percentage was used to estimate the true percentage of all high schools that met the recommended minimum requirements. The standard error of the difference between two independent percentages was used to test the difference between the percentages of small and large schools that met the recommended minimum requirements. The standard error of the difference between two independent percentages was used also in the present study to test
hypothesis 3 concerning the difference between boys' and girls' programs.

The refined questionnaire was composed of three major parts. The first part contained questions which gave data used in classifying the responses and for hypotheses 1J, 2A, and 3A. The second part contained questions about girls' physical education which provided data concerning hypotheses 1 through 3. The third part contained questions about boys' physical education which also provided data concerning hypotheses 1 through 3.

There were two cross checks incorporated in the questionnaire: one in the area of facilities and equipment and another in the area of body mechanics. The information obtained from the pilot study did not indicate a need for additional cross checks.

Organization of the Remainder of the Study

The remainder of this study was organized as follows: Chapter II contains related studies; Chapter III is an explanation of the methods and procedures of research; Chapter IV contains the presentation and analysis of data; and Chapter V is the summary, conclusions, and recommendations.
CHAPTER BIBLIOGRAPHY


CHAPTER II

RELATED STUDIES

Recent unfavorable reports by Bucher (5) and others on the physical fitness of American youth and the realization that the changing way of life is closely associated with many major health problems have stimulated an increase in research on the health of school age children. Recent studies have been concerned with both measuring physical fitness of school children and evaluating the quality of high school physical education programs.

The purpose of this chapter is to summarize a number of studies in order to present evidence of the need for improvement in the quality of high school physical education programs. These studies are categorized as follows: (1) physical fitness of American youth, (2) physical fitness and academic achievement, and (3) physical education programs in the United States, which is the particular area of concern of the following chapters.

Physical Fitness of Youth in the United States

The President's Conference on Fitness of American Youth, held at Annapolis in 1956, and the subsequent organization of the President's Council on Physical Fitness have resulted
in an increased interest in the physical fitness of the nation's youth. Most states have implemented programs designed to improve the physical fitness of school-age youth. This increased interest has resulted in a considerable amount of research being done on youth fitness. Some studies have been concerned with measuring the physical fitness of youth with various physical performance tests. Others have been concerned with comparing the physical performance scores of students in the United States with those of students from other nations. Comparisons were also made between current scores of students in the United States and those made by students ten to twenty-five years ago. Still other studies have been concerned with evaluating the effectiveness of conditioning programs in improving fitness.

Studies that have been concerned with measuring physical fitness generally reveal that marked weaknesses exist in school-age children in the United States. Bucher (5, pp. 22-25) reported the first results of the American Association for Health, Physical Education, and Recreation Youth Fitness Tests which were published in 1958. These tests were designed by the AAHPER Research Council and given for the first time in the United States to 8,500 school children from twenty-eight states. The results indicated that the physical fitness of school children in the United States leaves much to be desired. An examination of the
test scores revealed that boys and girls did poorly on such endurance tests as pull-ups, sit-ups, and 600-yard run-walk. Girls did not show improvement between the ages of ten and seventeen years in these tests.

Espenschade (16, p. 13) reported that the State of Connecticut has recently completed a survey on fitness of youth in that state. The findings revealed marked weakness in arm and shoulder girdle strength.

According to Mitchell (32, p. 399), the most important factor in rejection of young men from the armed forces during World War II were conditions of health and education. Figures made public in December of 1946 by the Selective Service System indicated that approximately 30 per cent of the young men examined for military service were rejected for physical or mental defects. In a study conducted by Van Huss and others (45, p. 4), it was found that the basic physical stamina of American prisoners of war in the Korean Conflict was sadly lacking when compared to prisoners of war from other nations.

Some informative studies have been concerned with comparing the physical performance scores of students in the United States with those of students from other nations. The results were usually unfavorable for American students. Campbell and Pohndorf (7, p. 15) applied the AAHPER Youth Fitness Test to ten thousand British children and compared
the scores to scores made by children in the United States. The results indicated that the British children were superior to the children from the United States on almost all measures. Similar findings on Danish students were reported by Knuttgen (27, p. 190). Results of the AAHPER Youth Fitness Test showed that 70 per cent of the Danish boys' scores and 86 per cent of the Danish girls' scores exceeded the mean scores of students from the United States.

Ikeda (22, p. 551) gave the Iowa Test of Motor Fitness to 395 Tokyo children and 355 Iowa children. The Japanese group exceeded the Iowa group on all tests except sit-ups and the grasshopper. A comparison of physical education programs revealed that the Tokyo children had more chances for activity through physical education classes than the Iowa group.

Conflicting evidence has been reported in two studies concerned with comparing current physical performance scores with scores made by students ten and twenty-four years ago. Espenschade and Melaney (17, p. 189) made a comparative study of current motor performance scores of California adolescents with performance scores of adolescents twenty-four years ago. Although current boys' scores were superior to those made by boys twenty-four years ago, with the opposite being true for girls' scores, no clear-cut differences were reported. Blesh and Schols (4, p. 523) made a
ten-year survey of the physical fitness of freshmen entering Yale. A failure rate of under 50 per cent was recorded for the class of 1951, whereas rates of 63 per cent for 1959 and 62 per cent for 1960 were found.

The effectiveness of physical education programs in improving physical fitness has been demonstrated in a number of studies. Clarke (8, p. 461) found that male students entering the University of Oregon with four years of high school physical education had higher average scores on the Physical Fitness Index tests than did those entering with two years or less. Whittle (49) reported similar results in his study of two groups of boys. Grogan (19, p. 5) declared that pupils in Philadelphia had a low failure rate on physical fitness tests because of the vigorous nature of the physical education program in their schools. Clarke and Wickens (11, p. 26) stated that the nature of the physical education program of the boys participating in the Boy Growth Project at Medford, Oregon, was an important factor affecting the superior physical fitness of the student group. The effect of the required physical education program upon the physical fitness of Yale freshmen was revealed by Blesh and Schols (4, p. 324). They found that only 41 per cent of the students passed all fitness tests at the beginning of the year, whereas 80 per cent passed after fourteen weeks of instruction.
Hall and Cain (20, p. 80) compared the fitness scores of three groups of Illinois 4-H members who were given different conditioning programs. One group had no program except verbal encouragement. Another group had a stepped-up conditioning program. The third group had no prior program but was given some conditioning. The results indicated that vigorous training is needed to make gains in physical fitness. Godlasy (18) reached the same conclusion in a study concerning the improvement of fitness in women. Knapp (25, p. 195) found that two months of vigorous training in a physical fitness program produced substantial improvement in physical fitness. Similar findings were reported by Clarke (8, p. 461) and Shaffer (40, p. 8). Both studies revealed that a program of vigorous conditioning exercises resulted in important gains in physical fitness.

According to Clarke and Peterson (10, p. 175), boys who make and are successful on interschool athletic teams are definitely superior to nonathletes in maturity, body size and build, muscular strength, and explosive muscular power.

Wear and Miller (47, p. 615) conducted a study among three hundred boys of the relationship of physique and developmental level to performance on four fitness tests. It was found that boys who were medium in physique and normal in development were the best performers. Boys of
heavy physique, especially overweight boys, were the poorest performers.

The American Association for Health, Physical Education, and Recreation (1, p. 41) revealed that a survey of the various states showed that a great emphasis was placed on physical fitness during 1957 and 1958 with the organization of new programs to improve physical fitness of school children. The results of this emphasis on physical fitness were clearly shown by Wilkinson (50, p. 10) in his progress report from the President's Council on Physical Fitness in 1963. He declared that despite recent gains approximately 20 per cent of the public school pupils in grades four through twelve still have no physical fitness programs at all.

Physical Fitness and Academic Achievement

During past years there has been general disagreement among both educators and the general public concerning the relationship between physical fitness and academic achievement. This has been especially true in regard to varsity athletes. A number of studies, however, present evidence that clearly supports the contention that physical fitness is related to academic achievement.

In his study of a thousand gifted children, Terman (43, pp. 171-286) made extensive physical measurements and concluded that the gifted group was, as a whole, physically
superior to the various control groups used for comparison. He stated that teachers' ratings showed that the gifted children were doing work of superior quality in the grade where they were located. Terman (44, p. 24) also reported similar findings in his follow-up study of gifted children.

Clarke and Jarman (9, p. 161) conducted a study among a group of boys of nearly equal intelligent quotients who made scores ranging from high to low on strength and growth tests. They found a consistent tendency for boys who scored high on the strength and growth tests to have higher means on both academic achievement tests and grade point averages than the boys who scored low on the strength and growth tests. Clarke (8, p. 463) reported the results of another study concerned with investigating the academic achievement of boys of nearly equal intelligence quotients who had high and low scores on various physical fitness tests. He revealed that boys with high scores on the physical fitness tests had significantly superior grade point averages and significantly higher means on scholastic achievement tests. Rogers (39) reached the same conclusion in a similar study conducted among college students of nearly equal intelligence.

Keogh and Benson (24, p. 534) administered a battery of motor performance tests to a group of underachieving boys from the Psychology Clinic School of the University of California. The total group demonstrated adequate body
strength and body control but scored low on measures of throwing, grip-strength, and speed. Many boys lacked throwing, catching, and striking skills. They concluded that these boys lacked skills which are essential for adequate performance in games and sports. Another study by Coleman, Keogh and Mansfield (13, p. 516) at the same school supported these findings. Similar results were reported by Page (36) in his study of male students dismissed from Syracuse University because of low grades and by Goefield and McCollum (12) in their study of freshmen low in scholastic achievement at the University of Oregon.

Eidsmoe (15, p. 53) revealed the results of two surveys conducted by him among varsity athletes in Iowa. In his first study, he found that basketball players who participated in the Iowa State Tournament in 1962 had significantly higher grade point averages than their nonparticipating classmates. His second study was carried out in a similar manner among the highest rated football teams in the state and produced similar results.

Ward (46, p. 77) conducted a study of the relationship between physical fitness and certain psychological, sociological, and physiological factors among junior high school boys. He found that the physically fit members of his study groups not only scored significantly higher in intelligence than the unfit members but they also rated higher in social
efficiency. In his report of the results of the Berkeley Growth Studies, Jones (23, p. 145) observed that boys high in strength tend to have good physiques, to be physically fit, and to enjoy favored social status. Boys who were low in strength showed a tendency toward poor physiques, poor health, social difficulties, feelings of inferiority, and personal maladjustment in other ways. Kuhlen and Lee (28, p. 338) agree with Jones' findings.

The results of a study conducted by Smith (42) indicated that physical, mental, emotional, and social needs which are common to adolescent girls may be met to a great extent through a well planned physical education program.

Physical Education Programs in the United States

A number of studies have been concerned with investigating the physical education programs of the nation's secondary schools during recent years. The results of these studies consistently showed significant weaknesses in physical education programs as a whole. There is evidence that many of the state departments of education are aware of these weaknesses and are attempting to improve the programs in their schools. This awareness was reflected in a report prepared by the Curriculum Committee of the Maine State Department of Education and sent to all Maine administrators. This report stated that
We believe that the secondary school should provide for all pupils adequate programs in physical education because good health is essential to effective living and consequently is an important goal of education. To accomplish this objective we believe that five 50-minute periods each week should be provided for each pupil in grades seven through twelve.

We recognize that it is impossible at present for most Maine secondary schools to carry out our recommendations. We hope, nevertheless, that all schools will strive to provide instruction that is as close to the ideal as local conditions permit (30, p. 32).

Hughes (21, p. 248) recently investigated the program and facilities in twenty high schools in Central Texas. He spent one day in each of the twenty schools checking existing physical education facilities and consulting with physical education teachers. Evaluations were based on standards suggested by the Texas Education Agency and authorities in the field of physical education. He concluded that the facilities in these schools were not adequate to meet the standards recommended by authorities in physical education. He also found that maximum use was not made of existing facilities.

A number of studies which were very similar to each other in purpose and scope have been conducted during recent years in several different states. Each of these studies was concerned with measuring the effectiveness of the physical education program in approximately one hundred high schools by means of the LaPorte Score Card. DeWitt (14, p. 268) conducted a survey among the high schools in Tennessee and concluded that according to the score card the
quality of the health and physical education programs was rather low. Wright (51, p. 66) surveyed the high schools in Missouri and reported that the physical education programs for girls had a mean total score that was 35.9 per cent of the possible score presented on the score card. Oldfield (35, p. 91) carried out an investigation among the high schools of Georgia and found that the mean total score of the sample schools was 25.77 per cent of the total possible score on the score card. He stated that there was little similarity in the physical education programs of the various high schools. A second study with the same purpose and scope, which supported Oldfield's findings, was carried out in Georgia by Smith (41). Two additional studies with the same purpose and scope have been conducted in two other states. Loken (29) surveyed the high schools in Michigan and Nasom (34) investigated the high schools in Louisiana. Both studies revealed results that were similar to the findings in the other states. Most of these studies revealed that larger cities and schools generally had better programs than small towns and schools.

The Research Division of the National Education Association (53, p. 108) made a questionnaire study of 873 city schools across the nation and concluded that in many respects programs as a whole still fail to measure up to the minimum standards recommended. Similar studies by Hundgaard
(6), Mand (31), and Parham (37), conducted in the states of Iowa, Ohio, and Arkansas, respectively, generally agreed with the findings of the NEA Research Division.

Antonacci (2, p. 143) interviewed three thousand high school students in Illinois and concluded that the school physical education program did not meet the needs and interests of youth since most of the students' sports instruction was concerned with the traditional team sports.

Pope (38, p. 33) visited ninety-two junior and senior high schools in twenty-five states and talked to 226 physical education teachers. He declared that the physical education programs in forty-nine of these schools were narrow in scope, unimaginative in administration, and conducted with a minimum of instruction.

Knapp and Drax (26, p. 355) made a questionnaire study among the physical education department heads of 126 Illinois high schools and revealed that the department heads believe that more time is needed for physical education. More individual and dual sports should be added to programs.

In a recent study, Baker (3, p. 636) sent a questionnaire to the state departments of education in each of the fifty states to secure information concerning certain administrative problems in physical education. Less than half of the responding states reported that 50 per cent or more of their secondary schools used current recommended standards
in time allotment, space allotment, and in the balanced and progressive program.

Bucher (5, p. 25) reported that a Fact Sheet distributed at the President's Conference on Fitness of American Youth, Annapolis, 1956, revealed that less than 50 per cent of seven and one-half million American boys in twenty-eight thousand high schools have physical education. Programs for seven and one-half million girls are even more deficient.

White (48, p. 134) has clearly shown the advantages that students gain from good physical education programs in his study among good, fair, and poor high school programs in Georgia. He stated that students enrolled in the better programs appeared to possess a higher degree of agility, arm strength and endurance, power, and hand-eye coordination than did students enrolled in poorer programs.

Summary

Considerable research has been done during recent years in the areas of physical fitness of youth, physical fitness and academic achievement, and physical education program practices. The results of these studies clearly showed the need for improvement in the quality of high school physical education programs. Studies concerned with measuring the physical fitness of youth consistently showed that American school children did not compare favorably with children from other countries in most test items. Other studies have
shown a definite relationship between physical fitness and academic achievement. Most studies that have been concerned with investigating physical education program practices have shown that programs in general were lacking in quality and were not meeting the needs of boys and girls.

Chapter III explains the methods and procedures of research used in this study of physical education programs in Texas high schools. Both the method of securing the data and the statistical procedures are explained.
CHAPTER BIBLIOGRAPHY


The data for this study were obtained with a questionnaire. The nine components of the physical education program recommended by the Texas Education Agency were used to construct this instrument. Information secured during the pilot study was used to refine the questionnaire.

The purpose of this chapter is to explain the steps taken in securing and treating the data for this study.

Procedures for Collecting Data

The refined questionnaire (Appendix B) was sent to the physical education teachers of 1103 Texas high schools. These schools made up the complete list of district assignments for all five classifications of high schools as determined by the Texas Interscholastic League. The 1103 schools were classified in the following groups:

1. 145 Class 4A schools
2. 115 Class 3A schools
3. 181 Class 2A schools
4. 200 Class A schools
5. 462 Class B schools
The questionnaires were mailed to each high school during the first week of October, 1964. Each questionnaire was accompanied by a cover letter (Appendix A) written by Jess Cearley, Chairman of the Department of Health, Physical Education and Recreation at North Texas State University, who was president of the Texas Association for Health, Physical Education and Recreation. This letter explained the purpose of the study, gave instructions for completing the questionnaire, and contained a request that the completed questionnaire be returned within ten days.

A follow-up letter and questionnaire was sent to each teacher who had not returned the completed questionnaire during the third and fourth week of October.

A return of 60 per cent, or 662 of the 1103 questionnaires was considered necessary to be meaningful. This total had to represent 60 per cent of the schools in each of the five classes. The return necessary from each class was as follows:

1. 87 Class 4A schools
2. 69 Class 3A schools
3. 109 Class 2A schools
4. 120 Class A schools
5. 277 Class B schools

The selection of the 60 per cent figure was done arbitrarily. There was reason to believe that it would be
difficult to secure a return greater than 60 per cent from the Class A and B schools. However, this assumption did not prove to be true. It was actually more difficult to secure a return greater than 60 per cent from the Class 3A schools.

Table I shows the total number and percentage of completed questionnaires returned by physical education teachers in each class. This table indicates that returns ranged from 63 per cent to 82 per cent in the various classes with a total return of 72 per cent.

**TABLE I**

PERCENTAGE OF QUESTIONNAIRES RETURNED BY SCHOOL CLASS

<table>
<thead>
<tr>
<th>School Class</th>
<th>First Return</th>
<th>Per Cent</th>
<th>Follow-up Return</th>
<th>Per Cent</th>
<th>Total Return</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>157</td>
<td>34</td>
<td>155</td>
<td>33</td>
<td>312</td>
<td>67</td>
</tr>
<tr>
<td>A</td>
<td>87</td>
<td>43</td>
<td>77</td>
<td>38</td>
<td>164</td>
<td>82</td>
</tr>
<tr>
<td>2A</td>
<td>84</td>
<td>46</td>
<td>65</td>
<td>36</td>
<td>149</td>
<td>82</td>
</tr>
<tr>
<td>3A</td>
<td>68</td>
<td>59</td>
<td>5</td>
<td>4</td>
<td>73</td>
<td>63</td>
</tr>
<tr>
<td>4A</td>
<td>89</td>
<td>61</td>
<td>3</td>
<td>2</td>
<td>92</td>
<td>63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>485</strong></td>
<td><strong>44</strong></td>
<td><strong>305</strong></td>
<td><strong>28</strong></td>
<td><strong>790</strong></td>
<td><strong>72</strong></td>
</tr>
</tbody>
</table>

A total of 485, or 44 per cent of the 1103 physical education teachers completed and returned the first questionnaire. This total represented a return in each class ranging from 34 per cent of the Class B schools to 61 per cent of the Class 4A schools. An additional 305 teachers completed
and returned the follow-up questionnaire. This represented an additional 33 per cent of the Class B schools, 38 per cent of the Class A schools, 36 per cent of the Class 2A schools, 4 per cent of the Class 3A schools, and 2 per cent of the Class 4A schools. This made a total return of 790 questionnaires, representing 72 per cent of the 1103 schools.

Procedures for Treating Data

The tenability of the hypotheses of this study was determined by tabulating responses to the items of the questionnaire and placing these responses in categorical divisions in order to find the proportion meeting recommended minimum requirements. Data concerning boys' and girls' programs were calculated separately. The data were tabulated and computations made by IBM data-processing equipment.

The standard error of a sample percentage was used to estimate the true percentage of all high schools which met the recommended minimum requirements in each of the ten areas of hypothesis 1.

Hypothesis 1A was treated as follows: the percentage of the total sample which possessed the recommended minimum requirement in the boys' program was calculated. The percentage which possessed the recommended minimum requirement in the girls' program was then calculated in the same manner. The standard error of each sample percentage was calculated.
and interpreted in terms of confidence limits. For the purposes of this study, it was assumed that the true percentage lay between the limits $p - 1.96p$ and $p + 1.96p$. The statistical formula for the standard error of a sample percentage, according to Smith (2, p. 79), is

$$s_p = \sqrt{\frac{pq}{n}}$$

$p =$ the percentage which possessed the requirement.
$q =$ $1 - p$.
$n =$ the size of the sample.

Smith (2, p. 79) stated that this is a simple tool for estimating the significance of a percentage. By using this procedure, hypotheses 1A through 1J were treated.

The following is an explanation of the standards used to determine the percentage of schools which met the recommended minimum requirements for hypotheses 1A through 1J.

A. The high school program had to include two or more physical fitness tests. These tests could be the AAHPER Youth Fitness Tests, other standardized fitness tests, or tests made by the individual school. If the school employed its own tests, they had to include at least one test of cardio-vascular-respiratory endurance and at least one test of muscular strength and endurance.

B. Body mechanics had to be taught in two areas.

These were the teaching of the fundamental movements
used in sports and the fundamental movements used in everyday living.

C. Conditioning exercises had to be given at least eight to twelve minutes each class period.

D. Both phases of gymnastics had to be taught during the unit. These phases were tumbling and apparatus activities.

E. The high school program had to include a weight training unit composed of standard weights and lifts for boys and modified lifts for girls.

F. A unit of folk rhythms had to be offered for boys, and a unit including both folk and modern rhythms had to be provided for girls.

G. It was assumed that more than 90 per cent of the high schools would meet the recommended minimum requirement of two team sports; however, there was reason to believe that less than 90 per cent offered more than the three traditional team sports, basketball, softball and volleyball. The percentage for this hypothesis was determined by simply tabulating the schools that offered more than three team sports.

H. The physical education program had to include at least two individual-dual sports. Sports such as
golf and tennis were not accepted if they were offered only as Interscholastic League sports.

I. The unit had to include both track and field activities.

J. The percentage for this hypothesis was determined by tabulating the yes answers to the items of the questionnaire concerning the adequacy of facilities and equipment.

Hypothesis 2 was tested by dividing both the boys' sample and the girls' sample into two groups—the small school group and the large school group. The definition of terms for this study explained the composition of these groups. The standard error of the difference between two independent percentages was used to test the statistical null hypothesis of no significant difference between the percentages of small and large schools which met the recommended minimum requirements. The formula for the standard error of the difference between two independent percentages as given by Garrett (1, p. 135) follows:

\[
SE_{D\%} = \sqrt{pq \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}
\]

\( p = \) the mean of the percentages in the two groups possessing the requirement.

\( q = 1 - p \).

\( n_1 = \) the number of cases in group 1.

\( n_2 = \) the number of cases in group 2.
The standard error was then divided into the difference between the two percentages to find the value of t. By using this method the significance of the difference between the percentages of small and large schools was determined in each of the ten areas included in hypotheses 2A, B, C, and D.

Hypothesis 3 was tested by dividing both the boys' sample and the girls' sample into their five respective classes. Girls' programs were then compared to boys' programs in each of the five classes. The above formula for the standard error of the difference between two independent percentages was used to test the null hypothesis of no significant difference between the boys' and girls' programs. This method was used to compare boys' and girls' programs in each of the ten areas included in hypotheses 3A, B, C, and D.

The statistical hypothesis of no significant difference was rejected with an alpha risk of 5 per cent.

Summary

The refined questionnaire was sent to the physical education teachers of the 1103 high schools that make up the five Interscholastic League classes. A return of 60 per cent from each class was considered necessary to carry out this study. Returns ranged from 63 per cent to 82 per cent in the various classes with a total return of 72 per cent.

The data were tabulated and the proportion meeting the recommended minimum requirements in each of the ten areas of
hypothesis 1 was determined. The standard error of a sample percentage was used to estimate the true percentage of all high schools which met the recommended minimum requirements.

Hypothesis 2 was tested by dividing both the boys' sample and the girls' sample into two groups. The standard error of the difference between two independent percentages was used to test the statistical null hypothesis of no significant difference between the percentages of small and large schools which met the recommended minimum requirements.

Hypothesis 3 was tested by dividing both the boys' sample and the girls' sample into their five respective classes. The above formula for the standard error of the difference between two independent percentages was used to compare girls' programs to boys' programs in each of the five classes.

Chapter IV presents the data that was secured from the physical education teachers. A complete analysis of the data and how it relates to the hypotheses of this study is given.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The responses to the various items of the questionnaires were tabulated and totals determined in each of the five classes of schools for both the boys' and girls' programs. The standards described in Chapter III were used to determine the proportion of schools in each class which met the recommended minimum requirements for each of the ten areas of hypothesis 1.

Totals in all five classes were combined to determine the proportion of the total sample of 790 schools which met the recommended minimum requirements for hypothesis 1. The standard error of a sample percentage was used to establish confidence limits for each of the percentages presented for this hypothesis.

The totals for each class were placed in two groups, small and large schools, in order to make comparisons in the ten areas of hypothesis 2. Hypothesis 3 was tested by comparing boys' programs to girls' programs in each of the five classes of schools. Girls' totals were compared to boys' totals in each of the ten areas of this hypothesis for each of the five classes. The standard error of the difference between independent percentages was used to test the
differences found in the various areas of hypotheses 2 and 3. Degrees of freedom were large enough in each case to safely assume that a $t$ of 1.96 or greater was significant at the 5 per cent level.

The purpose of this chapter is to present the results of the survey as they relate to the three major hypotheses of this study. Boys' data and girls' data are presented separately throughout the chapter.

Comparisons between High School Programs and Recommended Minimum Requirements

There are ten areas included in hypothesis 1, identified as hypotheses 1A through 1J. (See page 5.) These are concerned with fitness appraisals, body mechanics, conditioning exercises, gymnastics, weight training, rhythms, team sports, individual-dual sports, track and field, and facilities and equipment. Results of the survey showed that the proportion of the sample which met the recommended minimum requirements was below 90 per cent in each of the ten areas of both the boys' and girls' programs. The standard error of each sample percentage was computed and was reported as confidence limits. The standard error did not exceed 1.8 per cent for any of the percentages.

Table II shows the percentage of the sample which met the recommended minimum requirements in each of the areas.
included in hypotheses 1A through 1J. The standard error of each sample percentage is also shown.

TABLE II

PERCENTAGE OF SCHOOLS WHICH MET RECOMMENDED MINIMUM REQUIREMENTS IN EACH AREA INCLUDED IN HYPOTHESIS 1

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Percentage of Schools</th>
<th>Standard Error of the Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>73.4</td>
<td>74.3</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>66.4</td>
<td>61.5</td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>59.3</td>
<td>64.6</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>8.6</td>
<td>11.2</td>
</tr>
<tr>
<td>Weight training</td>
<td>12.4</td>
<td>64.9</td>
</tr>
<tr>
<td>Rhythms</td>
<td>14.0</td>
<td>4.1</td>
</tr>
<tr>
<td>More than three team sports</td>
<td>59.6</td>
<td>78.2</td>
</tr>
<tr>
<td>Minimum of two individual-dual sports</td>
<td>50.8</td>
<td>39.3</td>
</tr>
<tr>
<td>Track and field</td>
<td>48.9</td>
<td>73.4</td>
</tr>
<tr>
<td>Adequate facilities and equipment</td>
<td>24.9</td>
<td>24.9</td>
</tr>
</tbody>
</table>

**Fitness Appraisals**

The survey revealed that 73.4 per cent of the girls' programs met the recommended minimum requirement of two or more physical fitness tests each school year. The standard error of this sample percentage was 1.6 per cent. Therefore, it was assumed that the true percentage lay between the limits 71.8 per cent and 75 per cent. A slightly higher
percentage of 74.3 was found for boys' programs. With a standard error of 1.8 per cent, it was assumed that the true percentage for boys lay between the limits 72.5 per cent and 76.1 per cent. No physical fitness tests were included in 10.8 per cent of the girls' programs and 10.7 per cent of the boys' programs.

The Texas Education Agency recommends that in addition to the minimum of two physical fitness tests a third be given if possible each school year. It further recommends that the AAHPER Youth Fitness Tests be used by all schools in their testing program. Findings revealed that only 52.5 per cent of girls' programs and 35.4 per cent of the boys' programs included three or more fitness tests each school year. The AAHPER Youth Fitness Tests were used in 44 per cent of the girls' programs and 37.9 per cent of the boys' programs.

**Body Mechanics**

It was found that 66.4 per cent of the girls' programs met the recommended minimum requirements for teaching body mechanics. The standard error of this sample percentage was 1.7 per cent. This made it possible to assume that the true percentage lay between the limits 64.7 per cent and 68.1 per cent. A lower percentage of 61.5 was found for boys' programs. The standard error of this sample percentage was also 1.7 per cent. The true percentage for boys was assumed
to lie between the limits 59.8 per cent and 63.2 per cent. Further analysis of the results showed that 8.5 per cent of the girls' programs and 9.6 per cent of the boys' programs did not include the teaching of body mechanics. The remaining 25.3 per cent of the girls' programs and 28.9 per cent of the boys' programs did not meet the recommended minimum requirements because their programs included only those body movements concerned with the playing of sports. They did not offer instruction in the fundamental movements used in everyday living, such as walking, lifting, pushing, and pulling.

**Conditioning Exercises**

The results of the survey showed that 59.3 per cent of the girls' programs met the recommended minimum requirements for conditioning exercises. The standard error of this sample percentage was 1.7 per cent. Therefore, it was assumed that the true percentage lay between the limits 57.6 per cent and 61 per cent. A higher percentage of 64.6 per cent was revealed for boys' programs. With a standard error of 1.7 per cent, it was assumed that the true percentage for boys' programs lay between the limits 62.9 per cent and 66.3 per cent. Only eight teachers reported no conditioning exercise program for girls and only twelve teachers reported no exercise program for boys. The remaining 313 girls' programs and 266 boys' programs did not meet the recommended
minimum requirements because they either failed to provide exercises every class period or did not allow sufficient time for them each class period.

The Texas Education Agency standards simply specify that exercises be given each class period. The desirable program would include conditioning exercises five periods each week. A latter section of this chapter reveals that ninety-six of the sample schools did not provide physical education classes five days per week. On the basis of the above standard, these schools were credited with meeting the minimum requirements if they provided exercises each time they did have class and if they provided sufficient time for the exercise period. Additional information taken from the survey results showed that only 69.4 per cent of the girls' programs and 71.8 per cent of the boys' programs provided conditioning exercises five periods each week. However, only the reported 59.3 per cent of the girls' programs and 64.6 per cent of the boys' programs were meeting the recommended minimum requirements because the time spent on the exercises each day was less than eight minutes.

A desirable method of giving conditioning exercises is suggested by the Texas Education Agency. This method is referred to as the "speed principle," whereby students perform the exercises as rapidly as possible within a prescribed time. The survey results showed that 27.7 per cent of the
girls' teachers and 33.9 per cent of the boys' teachers made use of this principle.

**Gymnastics**

The survey revealed that 8.6 per cent of the girls' programs met the recommended minimum requirements for gymnastics. The standard error of this sample percentage was 1 per cent. This made it possible to assume that the true percentage lay between the limits 7.6 per cent and 9.6 per cent. A percentage of 11.2 was found for boys' programs. A standard error of 1.1 per cent made it possible to assume that the true percentage for boys' lay between the limits 10.1 per cent and 12.3 per cent.

Additional analysis of the survey results revealed that the percentage of schools meeting the requirements for gymnastics was quite low in all five classes, but the small school percentage was especially low at 5 per cent for girls and 5.6 per cent for boys. The highest percentage found in any class was 29.3 for Class 4A boys.

A majority of the schools given credit for meeting the minimum requirements did not actually have a comprehensive program of gymnastics. Many of the schools counted here had tumbling with a very limited number of apparatus activities, in some cases only one or two. Table III shows the number of teachers that reported certain gymnastic activities as part of their program.
As indicated in Table III, tumbling was included in 409, or 51.7 per cent, of the girls' programs and 364, or 46 per cent, of the boys' programs. This number is quite high compared to the number of times the other gymnastic activities

### TABLE III

**GYMNASTIC ACTIVITIES REPORTED BY HIGH SCHOOL TEACHERS**

<table>
<thead>
<tr>
<th>Gymnastic Activities</th>
<th>Number Which Reported for Girls' Programs</th>
<th>Number Which Reported for Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal bar</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>Parallel bars</td>
<td>28</td>
<td>49</td>
</tr>
<tr>
<td>Long or side horse</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Flying rings</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>Trampoline</td>
<td>73</td>
<td>65</td>
</tr>
<tr>
<td>Balance beam</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Tumbling</td>
<td>409</td>
<td>364</td>
</tr>
</tbody>
</table>

were included. A majority of this group was not credited with meeting the recommended minimum requirements because only the reported 8.6 per cent of girls' programs and 11.2 per cent of boys' programs offered apparatus activities in addition to tumbling. The standards outlined in Chapter III indicated that both tumbling and apparatus activities must be offered in order for the school to be considered as meeting the minimum requirements.

The second ranking gymnastic activity was the trampoline, appearing in seventy-three girls' programs and sixty-five
boys' programs. A number of teachers reported this as the only apparatus activity in their program. The remaining activities did not appear often enough to merit further discussion.

Weight Training

The findings revealed that 12.4 per cent of the girls' programs met the recommended minimum requirement for weight training. The standard error of this sample percentage was 1.6 per cent. Therefore, it was assumed that the true percentage lay between the limits 10.8 per cent and 14 per cent. A much higher percentage of 64.9 was found for boys' programs. With a standard error of 1.7 per cent, it was possible to assume that the true percentage for boys lay between the limits 63.2 per cent and 66.6 per cent.

A class-by-class analysis of the percentage of schools which were meeting the requirements for weight training revealed an unusual variation. Percentages for Classes B, 2A, and 3A programs were very close to the overall percentage for girls that was reported above. Percentages for Classes A and 4A programs were quite different. Class A exceeded all classes with a 20.7 per cent, whereas Class 4A girls' programs were lowest with a 3.2 per cent. No significant variations were noted among the various classes for boys' weight training programs, except Class B and again Class 4A ranked slightly lower than the other three classes.
A variation was found also in the frequency of weight training periods. It was found that 57.1 per cent of the girls' programs and 36.2 per cent of the boys' programs which included weight training allowed participation only one or two days each week. Students in the remaining schools which offered weight training participated from three to five periods weekly.

**Rhythms**

The survey results indicated that 14 per cent of the girls' programs met the recommended minimum requirements for rhythms. The standard error of this sample percentage was 1.2 per cent which made it possible to assume that the true percentage lay between the limits 12.8 per cent and 15.2 per cent. A very low percentage of 4.1 was found for boys' programs. A standard error of .7 per cent made it possible to assume that the true percentage for boys lay between the limits 3.4 per cent and 4.8 per cent. The Texas Education Agency standards suggest folk rhythms only for boys; therefore, each teacher that checked yes for this activity was given credit for meeting the recommended minimum requirement. The suggested program for girls, however, includes both folk and modern rhythms. Therefore, only the teachers that checked yes for both these activities were given credit for meeting the requirements.
Further analysis of the survey information showed that folk rhythms were more common in girls' programs than modern rhythms. The findings revealed that 30.7 per cent of the girls' sample included folk rhythms, while 17.8 per cent had modern rhythms. Only the reported 14 per cent included both types of rhythms however.

**Team Sports**

The results showed that 59.6 per cent of the girls' programs included a variety of more than three team sports. The standard error of this sample percentage was 1.7 per cent. This made it possible to assume that the true percentage lay between the limits 57.9 per cent and 61.3 per cent. A higher percentage of 78.2 was found for boys' programs. With a standard error of 1.5 per cent, it was possible to assume that the true percentage for boys lay between the limits 76.7 per cent and 79.7 per cent.

A class-by-class analysis of the percentage of schools which offered a variety of more than three team sports was also made to determine which class or classes were responsible for the lower girls' percentage. The small schools were primarily responsible for the girls' percentage being lower than the boys' percentage. Class B schools were especially low, with only 45.1 per cent of the girls' programs including a variety of more than three team sports.
Additional analysis showed that, as expected, more than 90 per cent of both the boys' and girls' programs included at least two team sports. This is the suggested minimum of the Texas Education Agency. The findings revealed that 98.7 per cent of the girls' programs and 99 per cent of the boys' programs included two or more team sports. A majority of the programs for both girls and boys included from two to five team sports. Only 12.9 per cent of the girls' programs and 18.8 per cent of the boys' programs provided for more than five. Just nine of the girls' programs and four of the boys' programs offered less than two.

The hypothesis for this area was based on the assumption that many schools did not offer more than the three traditional team sports—basketball, softball, and volleyball. This is clearly demonstrated in Table IV, which shows the number of teachers that reported certain team sports as part of their program.

As indicated in Table IV, basketball, softball, and volleyball far outranked all other team sports, indicating that many schools offered these sports only in their program. Each of these three sports was included in over 90 per cent of both the boys' and girls' programs, with the exception of softball for boys which was included in 84 per cent of their programs. The fourth ranking activity for both girls and boys was soccer, which was included in less than 50 per cent
of the programs. Speedball did not rank high in either boys' or girls' programs but was included more often for girls. Field hockey was offered by a small percentage of the sample, appearing in thirty-five girls' programs and twenty-eight boys' programs.

**TABLE IV**

**TEAM SPORTS REPORTED BY THE HIGH SCHOOL TEACHERS**

<table>
<thead>
<tr>
<th>Team Sports</th>
<th>Number Which Reported for Girls' Programs</th>
<th>Number Which Reported for Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>766</td>
<td>780</td>
</tr>
<tr>
<td>Field hockey</td>
<td>35</td>
<td>28</td>
</tr>
<tr>
<td>Soccer</td>
<td>307</td>
<td>341</td>
</tr>
<tr>
<td>Softball</td>
<td>714</td>
<td>666</td>
</tr>
<tr>
<td>Speedball</td>
<td>200</td>
<td>144</td>
</tr>
<tr>
<td>Volleyball</td>
<td>782</td>
<td>729</td>
</tr>
</tbody>
</table>

**Individual-Dual Sports**

The findings revealed that 50.8 per cent of the girls' programs met the recommended minimum requirements for individual-dual sports. The standard error of this sample percentage was 1.8 per cent; therefore, it was assumed that the true percentage lay between the limits 49 per cent and 52.6 per cent. A percentage of 39.3 was found for boys' programs. With a standard error of 1.7 per cent, it was possible to assume that the true percentage for boys lay between the limits 37.6 per cent and 41 per cent. A more
complete analysis of the survey results revealed that Class B schools again were much lower in this area than the other classes with a 27.8 per cent for girls and 28.5 per cent for boys. The percentage of schools meeting the requirements for individual-dual sports tended to increase with class size, ranging up to 83.6 per cent for Class 4A girls and 54.7 per cent for Class 3A boys. The percentage for Class 4A boys dropped off slightly to 48.9.

A breakdown of the number of individual-dual sports offered by the schools which met the minimum requirements in this area showed that many programs did not include more than the two required sports. Actually, a majority of this qualifying group in both the boys' and girls' programs fell into this category except Classes 3A and 4A girls' programs. Most of the programs in these two classes included at least three sports of this type. Taken as a whole, however, only 43 per cent of the qualifying girls' programs included more than two individual sports, while only 26 per cent included more than two dual sports. Of the qualifying boys' programs, 34 per cent included more than two individual sports and 14 per cent included more than two dual sports.

Table V shows the number of teachers that reported certain individual and dual sports as part of their program. As indicated in Table V, the dual sports, badminton and tennis, far outranked the individual sports. Badminton
ranked first for girls, appearing in 56.5 per cent of all the programs. Tennis followed closely with a 54.5 per cent. The reverse was true for boys' programs. Tennis was reported by 41.2 per cent of the responding schools, while badminton was reported by only 34.8 per cent.

TABLE V

INDIVIDUAL AND DUAL SPORTS REPORTED BY THE HIGH SCHOOL TEACHERS

<table>
<thead>
<tr>
<th>Individual and Dual Sports</th>
<th>Number Which Reported for Girls' Programs</th>
<th>Number Which Reported for Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archery</td>
<td>174</td>
<td>68</td>
</tr>
<tr>
<td>Badminton</td>
<td>447</td>
<td>275</td>
</tr>
<tr>
<td>Bowling</td>
<td>69</td>
<td>52</td>
</tr>
<tr>
<td>Golf</td>
<td>68</td>
<td>95</td>
</tr>
<tr>
<td>Tennis</td>
<td>431</td>
<td>326</td>
</tr>
</tbody>
</table>

Archery was the leading individual sport in girls' programs, followed by bowling and golf. In boys' programs, golf ranked first, followed by archery and bowling. These sports did not rank very high in either the boys' or girls' programs. Archery was reported by 22 per cent of the girls' sample and golf by 12 per cent of the boys' sample.

Track and Field

The survey results showed that 48.9 per cent of the girls' programs met the recommended minimum requirements for
track and field. The standard error of this sample percentage was 1.8 per cent. This made it possible to assume that the true percentage lay between the limits 47.1 per cent and 50.7 per cent. A much higher percentage of 73.4 was found for boys’ programs. A standard error of 1.6 per cent made it possible to assume that the true percentage for boys lay between the limits 71.8 per cent and 75 per cent.

An additional 8 per cent of the girls’ sample reported a limited program of track only. An additional 16 per cent of the boys’ sample reported that track and field were offered, but these were limited to Interscholastic League teams.

A class-by-class analysis showed that the percentage of schools which met the minimum requirements for track and field was fairly uniform throughout all five classes of schools in both the boys’ and girls’ programs. In the girls’ programs, Class 2A ranked low with a 40.9 per cent. Classes A and 3A ranked high with 53.6 per cent and 53.4 per cent, respectively. In the boys’ programs, Class B ranked low with a 68.5 per cent, while Class 3A ranked high with 82.1 per cent. The other classes in each case ranked quite close to the average per cent.

Facilities and Equipment

The survey revealed that 24.9 per cent of the responding schools provided adequate facilities and equipment for a balanced physical education program. The standard error of
this sample percentage was 1.5 per cent. Therefore, it was
assumed that the true percentage lay between the limits 23.4
per cent and 26.4 per cent. An important variation was dis-
covered in this area. Question number seven in the general
section of the questionnaire simply asked, "Does your school
provide adequate facilities and equipment for a well-rounded
physical education program?" The results showed that 51 per
cent of the responding teachers answered yes to this ques-
tion. The last question in the boys' and girls' sections of
the questionnaire asked, "Does your school provide the
facilities and equipment that would be needed for the compre-
hensive program covered in this questionnaire?" As reported
above, 24.9 per cent of the respondents answered yes to this
question. This was considered as being the percentage
having adequate facilities and equipment.

Additional analysis revealed that the percentage that
had adequate facilities and equipment in the various classes
tended to increase with class size, ranging from 18.5 per
cent in Class B to 33.8 per cent in Class 4A.

A complete breakdown showing the percentage in each of
the five classes which met the recommended minimum require-
ments for the ten areas of hypothesis 1 is found in Appendix
C, Tables XVI through XXV.
Summary of Hypotheses

Hypothesis 1 stated that less than 90 per cent of the responding schools meet the recommended minimum requirements for the following: (A) fitness appraisals, (B) body mechanics, (C) conditioning exercises, (D) gymnastics, (E) weight training, (F) rhythms, (G) a variety of more than three team sports, (H) individual-dual sports, (I) track and field, and (J) adequate facilities and equipment for a balanced physical education program. The evidence obtained in this study supported hypothesis 1 in all ten areas.

The survey results showed that 73.4 per cent of the girls' programs met the recommended minimum requirements for hypothesis IA, 66.4 per cent for hypothesis IB, 59.3 per cent for hypothesis IC, 8.6 per cent for hypothesis ID, 12.4 per cent for hypothesis IE, 14 per cent for hypothesis IF, 59.6 per cent for hypothesis IG, 50.8 per cent for hypothesis IH, and 48.9 per cent for hypothesis IJ.

The results indicated that 74.3 per cent of the boys' programs met the recommended minimum requirements for hypothesis IA, 61.5 per cent for hypothesis IB, 64.6 per cent for hypothesis IC, 11.2 per cent for hypothesis ID, 64.9 per cent for hypothesis IE, 4.1 per cent for hypothesis IF, 78.2 per cent for hypothesis IG, 39.3 per cent for hypothesis IH, and 73.4 per cent for hypothesis IJ.
The findings revealed that 24.9 per cent of the responding schools qualified for hypothesis 1.

Comparisons between Large and Small School Programs

The ten areas included in hypothesis 1 were used to make comparisons between large and small school programs for hypothesis 2. These ten areas are grouped into hypotheses 2A, B, C, and D. (See page 3.)

The difference between the percentages of large and small schools which met the recommended minimum requirements were determined for each of the ten areas for both the boys' and girls' programs. The significance of the difference between the percentages was then computed in each area.

Table VI portrays each program area, the percentage difference between large and small schools, the t value, and the findings of significant difference or no significant difference.

Table VI shows that in the girls' programs the difference between the large and small school percentages in seven of the program areas was significant at the 5 per cent level or better; therefore, the statistical hypothesis of no significant difference was rejected. In six of these seven areas, the large school percentage was significantly greater than the small school percentage. In one of these areas, the small school percentage was significantly greater. The
difference between the large and small school percentage in three of the areas was not significant; therefore, the statistical hypothesis of no significant difference was retained.

**TABLE VI**

**COMPARISONS BETWEEN LARGE AND SMALL SCHOOL PROGRAMS**

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Girls' Programs</th>
<th></th>
<th></th>
<th>Boys' Programs</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per Cent Diff.</td>
<td>t</td>
<td>Finding</td>
<td>Per Cent Diff.</td>
<td>t</td>
<td>Finding</td>
</tr>
<tr>
<td>Adequate facilities and equipment</td>
<td>13.1</td>
<td>4.23</td>
<td>S-L*</td>
<td>13.1</td>
<td>4.23</td>
<td>S-L</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>18.2</td>
<td>5.68</td>
<td>S-L</td>
<td>16.7</td>
<td>5.22</td>
<td>S-L</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>5.5</td>
<td>1.91</td>
<td>NS**</td>
<td>4.9</td>
<td>1.40</td>
<td>NS</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>9.0</td>
<td>4.50</td>
<td>S-L</td>
<td>14.1</td>
<td>6.15</td>
<td>S-L</td>
</tr>
<tr>
<td>Rhythms</td>
<td>20.4</td>
<td>8.16</td>
<td>S-L</td>
<td>.6</td>
<td>.43</td>
<td>NS</td>
</tr>
<tr>
<td>Minimum of two individual-dual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate facilities and equipment</td>
<td>38.7</td>
<td>10.75</td>
<td>S-L</td>
<td>16.1</td>
<td>4.60</td>
<td>S-L</td>
</tr>
<tr>
<td>Track and field</td>
<td>6.7</td>
<td>1.86</td>
<td>NS</td>
<td>5.0</td>
<td>1.56</td>
<td>NS</td>
</tr>
<tr>
<td>More than three team sports</td>
<td>22.6</td>
<td>6.27</td>
<td>S-L</td>
<td>7.0</td>
<td>2.33</td>
<td>S-L</td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>5.6</td>
<td>1.56</td>
<td>NS</td>
<td>5.0</td>
<td>1.45</td>
<td>NS</td>
</tr>
<tr>
<td>Weight training</td>
<td>5.2</td>
<td>2.17</td>
<td>S-S***</td>
<td>4.8</td>
<td>1.37</td>
<td>NS</td>
</tr>
</tbody>
</table>

*S-L signifies that the difference was significant at the 5 per cent level or better in favor of large schools.

**NS signifies that the difference was not significant at the 5 per cent level.

***S-S signifies that the difference was significant at the 5 per cent level or better in favor of small schools.

In the boys' programs, the difference between the large and small school percentages in five of the program areas.
was significant at the 5 per cent level or better; therefore, the statistical hypothesis of no significant difference was rejected. In each of these five areas the large school percentage was significantly greater than the small school percentage. The difference between the large and small school percentages in the other five areas was not significant; therefore, the statistical hypothesis of no significant difference was retained.

**Facilities and Equipment**

A significantly greater percentage of large schools provided adequate facilities and equipment for a balanced physical education program. The survey revealed that 32.8 per cent of the 314 large schools and 19.7 per cent of the 476 small schools had adequate facilities and equipment. This 13.1 per cent difference was significant at better than the 1 per cent level. The various class percentages that made up these two groups were very close to their common group percentages. This indicates how clearly the difference between the large and small schools was defined in this area.

**Fitness Appraisals**

A significantly greater percentage of large schools met the minimum requirements for fitness appraisals in girls' programs. The findings indicated that 84.3 per cent of the
large schools and 66.1 per cent of the small schools qualified in this area. This 18.2 per cent difference was significant at better than the 1 per cent level. In the boys' programs, the large school percentage was also significantly greater than the small school percentage. It was found that 84.3 per cent of the large schools and 67.6 per cent of the small schools met the minimum requirements for fitness appraisals. The difference of 16.7 per cent was significant at better than the 1 per cent level.

An examination of the various class percentages revealed that the difference between the large and small schools was not so clearly defined in this area as in the previous area. There was a wider gap between the Class A and Class B percentages than between the Class A and Class 2A percentages. Class 2A had the lowest percentage of the large school group. Both the boys' and girls' percentages in Class B fell approximately 10 per cent below the Class A percentages, whereas the Class A boys' and girls' percentages fell approximately 7 per cent below the Class 2A percentages.

**Body Mechanics**

No significant difference was found between the percentage of large and small schools which met the minimum requirements for teaching body mechanics. In the girls' programs, 70.3 per cent of the large schools and 63.8 per
cent of the small schools qualified. In the boys' programs, 58.5 per cent of the large schools and 63.4 per cent of the small schools met the minimum requirements. Both the 6.5 per cent difference in the girls' programs and the 4.9 per cent difference in the boys' programs failed to reach the 5 per cent level of significance. Additional analysis of the survey results revealed that Class 2A was primarily responsible for the girls' large school group failing to have a significantly greater percentage than the small school group. The Class 2A percentage was approximately 6 per cent lower than both the Class 3A and Class 4A percentages. The various class percentages in the boys' programs did not vary greatly from their common group percentage. The unusual factor here was the Class B percentage, which was slightly higher than the other four class percentages.

**Gymnastics**

A significantly greater percentage of large schools met the recommended minimum requirements for gymnastics in the girls' programs. The results showed that 14 per cent of the large schools and 5 per cent of the small schools met the requirements. This 9 per cent difference was significant at better than the 1 per cent level. The boys' large school percentage was also significantly greater than the small school percentage. It was found that 19.7 per cent of the
large schools and 5.6 per cent of the small schools qualified in this area. The difference of 14.1 per cent was significant at better than the 1 per cent level.

Further examination of the survey results showed that in both the boys' and girls' programs the Class 2A percentage fell much lower than the other large school class percentages. This was especially noticeable in the boys' programs where the Class 4A percentage was 16.6 per cent higher than the Class 2A percentage.

Rhythms

The percentage of large schools which met the recommended minimum requirements for girls' rhythms was significantly greater than the small school percentage. The findings indicated that 26.4 per cent of the large schools and 6 per cent of the small schools met the requirements in this area. This 20.4 per cent difference was significant at better than the 1 per cent level. No significant difference was found between the percentage of large and small schools which met the requirements for rhythms in the boys' programs. Both the large and small school percentages were extremely low with a 3.8 and 4.4, respectively. The 1.6 per cent difference failed to reach the 5 per cent level of significance.

A class-by-class examination of the findings revealed that each of the class percentages in the boys' programs was very close to the two group percentages; however, greater
differences were noticeable among the various classes in the girls' programs. This was particularly true of the large school group where the Class 4A percentage was 28.9 per cent above the Class 2A percentage.

**Individual-Dual Sports**

A significantly greater percentage of large schools met the recommended minimum requirements for individual-dual sports in the girls' programs. The survey revealed that 74.2 per cent of the large schools and 35.5 per cent of the small schools qualified in this area. This 38.7 per cent difference was significant at better than the 1 per cent level. In the boys' program, the large school percentage was also significantly greater than the small school percentage. It was found that 49 per cent of the large schools and 32.9 per cent of the small schools met the requirements for individual-dual sports. The 16.1 per cent difference was significant at better than the 1 per cent level.

Additional analysis revealed that the low percentages for small schools in this area were due to the low Class B percentages. The Class B girls' percentage was 22.2 per cent below the Class A girls' percentage and the Class B boys' percentage was 12.9 per cent below the Class A boys' percentage. The Class A percentage was sufficiently lower than the Class 2A percentage in both the girls' and boys'
programs, however, to show a clear difference between large and small schools.

**Track and Field**

The difference between large and small schools which met the recommended minimum requirements for track and field was not significant. In the girls' programs, 44.9 per cent of the large schools and 51.6 per cent of the small schools qualified. In the boys' programs, 76.4 per cent of the large schools and 71.4 per cent of the small schools met the minimum requirements. Both the 6.7 per cent difference in the girls' programs and the 5 per cent difference in the boys' programs failed to reach the 5 per cent level of significance. The only noteworthy differences in this area were between boys' and girls' programs, which will be dealt with in a latter portion of this chapter.

**Team Sports**

The percentage of large schools which offered a variety of more than three team sports was significantly greater than the small school percentage in both the girls' and boys' programs. For girls, 73.2 per cent of the large schools and 50.6 per cent of the small schools qualified. This 22.6 per cent difference was significant at better than the 1 per cent level. For boys, 82.4 per cent of the large schools and 75.4 per cent of the small schools qualified.
The 7 per cent difference was significant at better than the 5 per cent level. Class B girls' programs were particularly weak in this area. This weakness was the primary reason why the wide difference existed between large and small schools. No great differences were noticeable between the various class percentages in the boys' programs, as indicated by the rather low percentage of difference between large and small schools.

**Conditioning Exercises**

No significant difference was found between the percentage of large and small schools which met the recommended minimum requirements for conditioning exercises. In the girls' programs, 62.7 per cent of the large schools and 57.1 per cent of the small schools qualified. In the boys' programs, 67.8 per cent of the large schools and 62.8 per cent of the small schools met the requirements. Both the 5.6 per cent difference for girls and the 5 per cent difference for boys failed to reach the 5 per cent level of significance. No great differences existed between the percentages of the various classes in this area. In both the girls' and boys' programs, all the various class percentages were quite close to their common group percentages.

**Weight Training**

A significantly greater percentage of small schools met the recommended minimum requirements for weight training in
girls' programs. The findings indicated that 14.4 per cent of the small schools and 9.2 per cent of the large schools qualified. This 5.2 per cent difference was significant at better than the 5 per cent level. No significant difference was found between the percentage of large and small schools which met the requirements for boys' weight training. The survey revealed that 67.8 per cent of the large schools and 63 per cent of the small schools qualified. The 4.8 per cent difference failed to reach the 5 per cent level of significance. Further analysis revealed that Class 4A girls' programs were the weakest in this area. Only 3.2 per cent of that sample met the requirements for this area. Once again, the most significant differences were those that existed between girls' and boys' programs.

**Summary of Hypotheses**

Hypothesis 2 stated that there is a significant difference between the programs of large and small schools. Hypothesis 2A stated that a significantly greater percentage of large schools have adequate facilities and equipment for a balanced physical education program. The evidence obtained during this study supported this hypothesis. The large school percentage was 13.1 per cent higher than the small school percentage and was significant at better than the 1 per cent level.
Hypothesis 2 stated that a significantly greater percentage of large schools meet the recommended minimum requirements for fitness appraisals, training in body mechanics, gymnastics, rhythmic activities, individual-dual sports, and track and field.

The evidence obtained supported the hypothesis concerning fitness appraisals for both boys' and girls' programs. The large school girls' percentage was 18.2 per cent higher than the small school percentage, while the large school boys' percentage was 16.7 per cent higher than the small school percentage. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

The results of the study did not support the hypothesis concerning the teaching of body mechanics. The small percentage difference between large and small schools was not significant in either the girls' or boys' programs.

The findings supported the hypothesis concerning gymnastics for both boys' and girls' programs. The girls' large school percentage was 9 per cent higher than the small school percentage. The boys' large school percentage was 14.1 per cent higher than the small school percentage. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.
The evidence obtained supported the hypothesis concerning rhythmic activities for girls' programs but did not for boys' programs. The girls' large school percentage was 20.4 per cent higher than the small school percentage and was significant at better than the 1 per cent level. No significant difference was found between large and small school boys' programs.

The survey results supported the hypothesis concerning individual-dual sports for both boys' and girls' programs. The girls' large school percentage was 38.7 per cent higher than the small school percentage. The boys' large school percentage was 16.1 per cent higher than the small school percentage. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

The results of the survey did not support the hypothesis concerning track and field. The percentage difference between large and small schools was not significant in either the girls' or boys' programs.

Hypothesis 20 stated that a significantly greater percentage of large schools offer a variety of more than three team sports. The evidence obtained supported this hypothesis for both girls' and boys' programs. The girls' large school percentage was 22.6 per cent higher than the small school percentage, while the boys' large school percentage was 7 per cent higher than the small school percentage. The girls'
percentage was significant at better than the 1 per cent level and the boys' percentage at better than the 5 per cent level.

Hypothesis 2D stated that a significantly greater percentage of small schools meet the recommended minimum requirements for conditioning exercises and weight training. The results of the study did not support the hypothesis concerning conditioning exercises. No significant difference was found between the large and small school percentages in either the girls' or boys' programs. The evidence did support the hypothesis concerning weight training for girls but not for boys. The small school girls' percentage was 5.2 per cent higher than the large school percentage and was significant at better than the 5 per cent level. The percentage difference between boys' large and small school programs for weight training was not significant.

Comparisons between Boys' and Girls' Programs

The same ten areas included in hypotheses 1 and 2 were used to make comparisons between boys' and girls' programs for hypothesis 3. These ten areas are grouped into hypotheses 3A, B, C, and D. (See page 4.)

Comparisons were made between boys' and girls' programs in each of the five classes. The difference between the boys' and girls' percentages was determined for each of the
ten areas in each of the five classes. The significance of each percentage difference was then computed.

Class B

Table VII portrays each program area, the percentage difference between girls' and boys' programs, the $t$ value, and the findings of significant difference or no significant difference for the 312 Class B programs.

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Percentage Difference</th>
<th>$t$</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate facilities and equipment</td>
<td>0</td>
<td>0.00</td>
<td>NS*</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>2.6</td>
<td>0.67</td>
<td>NS</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>2.9</td>
<td>0.76</td>
<td>NS</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>0.9</td>
<td>0.50</td>
<td>NS</td>
</tr>
<tr>
<td>Rhythms</td>
<td>0.7</td>
<td>0.41</td>
<td>NS</td>
</tr>
<tr>
<td>Minimum of two individual-dual</td>
<td>.7</td>
<td>0.19</td>
<td>NS</td>
</tr>
<tr>
<td>sports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than three team sports</td>
<td>29.9</td>
<td>7.67</td>
<td>S-B**</td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>10.3</td>
<td>2.64</td>
<td>S-B</td>
</tr>
<tr>
<td>Weight training</td>
<td>47.4</td>
<td>12.47</td>
<td>S-B</td>
</tr>
<tr>
<td>Track and field</td>
<td>17.9</td>
<td>4.39</td>
<td>S-B</td>
</tr>
</tbody>
</table>

*NS signifies that the difference was not significant at the 5 per cent level.

**S-B signifies that the difference was significant at the 5 per cent level or better in favor of boys' programs.

This table shows that the difference between boys' and girls' percentages in four of the ten program areas was
significant at better than the 1 per cent level; therefore, the statistical hypothesis of no significant difference was rejected. In each of these four areas the boys' percentage was significantly greater than the girls' percentage. The difference between girls' and boys' percentages in the remaining six areas was not significant; therefore, the statistical hypothesis of no significant difference was retained.

As indicated in Table VII, no significant difference was found between the percentage of Class B girls' and boys' programs which met the requirements for facilities and equipment, fitness appraisals, body mechanics, gymnastics, rhythms, and individual-dual sports.

A significantly greater percentage of boys' programs offered a variety of more than three team sports. The boys' percentage was 29.9 per cent higher than the girls' percentage and was significant at better than the 1 per cent level.

A significantly greater percentage of boys' programs met the recommended minimum requirements for conditioning exercises, weight training, and track and field. The boys' percentage was 10.3 per cent higher than the girls' percentage for conditioning exercises, 47.4 per cent higher for weight training, and 17.9 per cent higher for track and
field. Each of these percentages was significant at better than the 1 per cent level.

Class A

Table VIII shows each program area, the percentage difference between girls' and boys' programs, the $t$ value, and the findings of significant difference or no significant difference for the 164 Class A programs.

**TABLE VIII**

**COMPARISONS BETWEEN CLASS A BOYS' AND GIRLS' PROGRAMS**

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Percentage Difference</th>
<th>$t$</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate facilities and equipment</td>
<td>0.0</td>
<td>0.00</td>
<td>NS*</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>0.6</td>
<td>1.33</td>
<td>NS</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>6.7</td>
<td>1.26</td>
<td>NS</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>0.0</td>
<td>0.00</td>
<td>NS</td>
</tr>
<tr>
<td>Rhythms</td>
<td>6.1</td>
<td>2.35</td>
<td>S-G**</td>
</tr>
<tr>
<td>Minimum of two individual-dual sports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than three team sports</td>
<td>8.6</td>
<td>1.56</td>
<td>NS</td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>15.3</td>
<td>3.00</td>
<td>S-B***</td>
</tr>
<tr>
<td>Weight training</td>
<td>3.1</td>
<td>0.57</td>
<td>NS</td>
</tr>
<tr>
<td>Track and field</td>
<td>50.6</td>
<td>9.20</td>
<td>S-B</td>
</tr>
<tr>
<td>Weight training</td>
<td>23.2</td>
<td>4.37</td>
<td>S-B</td>
</tr>
</tbody>
</table>

*NS signifies that the difference was not significant at the 5 per cent level.

**S-G signifies that the difference was significant at the 5 per cent level or better in favor of girls' programs.

**S-B signifies that the difference was significant at the 5 per cent level or better in favor of boys' programs.
This table shows that the difference between girls' and boys' percentages in four of the program areas was significant at better than the 5 per cent level; therefore, the statistical hypothesis of no significant difference was rejected. In one of these four areas, the girls' percentage was significantly higher than the boys' percentage. In the other three areas, the boys' percentage was significantly higher. In the remaining six areas, no significant difference was found between girls' and boys' programs; therefore, the statistical hypothesis of no significant difference was retained.

As seen in Table VIII, no significant difference was found between the percentage of Class A girls' and boys' programs which met the requirements for facilities and equipment, fitness appraisals, body mechanics, gymnastics, individual-dual sports, and conditioning exercises.

A significantly greater percentage of girls' programs met the minimum requirements for rhythms. The girls' percentage was 6.1 per cent higher than the boys' percentage and was significant at better than the 5 per cent level.

The percentage of boys' programs which offered a variety of more than three team sports was significantly greater than the girls' percentage. The boys' percentage exceeded the girls' percentage by 15.3 per cent and was significant at better than the 1 per cent level.
In the areas of weight training and track and field, the percentage of boys' programs which met the requirements was also significantly greater than the girls' percentage. The boys' percentage was 50.6 per cent higher than the girls' percentage for weight training and 23.2 per cent higher for track and field. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

Class 2A

Table IX portrays each program area, the percentage difference between girls' and boys' programs, the t value, and the findings of significant difference or no significant difference for the 149 Class 2A programs.

This table shows that the difference between girls' and boys' percentages in four of the program areas was significant at better than the 1 per cent level; therefore, the statistical hypothesis of no significant difference was rejected. The girls' percentage was significantly higher than the boys' percentage in two of these four areas. The boys' percentage was significantly higher in the other two areas. No significant difference was found between girls' and boys' programs in the remaining six areas; therefore, the statistical hypothesis of no significant difference was retained.
Table IX shows that no significant difference was found between the percentage of Class 2A girls' and boys' programs which met the requirements for facilities and equipment, fitness appraisals, body mechanics, gymnastics, team sports, and conditioning exercises.

**TABLE IX**
**COMPARISONS BETWEEN CLASS 2A BOYS' AND GIRLS' PROGRAMS**

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Percentage Difference</th>
<th>t</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate facilities and equipment</td>
<td>0</td>
<td>.00</td>
<td>NS*</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>.6</td>
<td>.13</td>
<td>NS</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>6.7</td>
<td>1.20</td>
<td>NS</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>4.0</td>
<td>1.11</td>
<td>NS</td>
</tr>
<tr>
<td>Rhythms</td>
<td>10.8</td>
<td>3.48</td>
<td>S-G**</td>
</tr>
<tr>
<td>Minimum of two individual-dual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than three</td>
<td>18.8</td>
<td>3.24</td>
<td>S-G</td>
</tr>
<tr>
<td>team sports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>7.4</td>
<td>1.64</td>
<td>NS</td>
</tr>
<tr>
<td>Weight training</td>
<td>.7</td>
<td>.13</td>
<td>NS</td>
</tr>
<tr>
<td>Track and field</td>
<td>61.7</td>
<td>10.82</td>
<td>S-B***</td>
</tr>
<tr>
<td>Weight training</td>
<td>33.5</td>
<td>5.88</td>
<td>S-B</td>
</tr>
</tbody>
</table>

*NS signifies that the difference was not significant at the 5 per cent level.

**S-G signifies that the difference was significant at the 5 per cent level or better in favor of girls' programs.

***S-B signifies that the difference was significant at the 5 per cent level or better in favor of boys' programs.

A significantly greater percentage of girls' programs met the minimum requirements for rhythms and individual-dual
sports. The girls' percentage was 10.8 per cent higher than the boys' percentage for rhythms and 18.8 per cent higher for individual-dual sports. Both percentages were significant at better than the 1 per cent level.

The percentage of boys' programs which met the requirements for weight training and track and field was significantly higher than the girls' percentages. The boys' percentage was 61.7 per cent higher than the girls' percentage for weight training and was 33.5 per cent higher for track and field. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

Class 3A

Table X shows each program area, the percentage difference between girls' and boys' programs, the t value, and the findings of significant difference or no significant difference for the 73 Class 3A programs.

This table shows that the difference between girls' and boys' percentages in five of the program areas was significant at better than the 1 per cent level; therefore, the statistical hypothesis of no significant difference was rejected. The girls' percentage was significantly greater in three of these five areas, while the boys' percentage was significantly higher in the other two. No significant difference was found between girls' and boys' programs in the
remaining five areas; therefore, the statistical hypothesis of no significant difference was retained.

**TABLE X**

**COMPARISONS BETWEEN CLASS 3A BOYS' AND GIRLS' PROGRAMS**

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Percentage Difference</th>
<th>t</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate facilities and equipment</td>
<td>0.0</td>
<td>.00</td>
<td>NS*</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>4.1</td>
<td>.71</td>
<td>NS**</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>19.2</td>
<td>2.63</td>
<td>S-G**</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>2.8</td>
<td>.42</td>
<td>NS</td>
</tr>
<tr>
<td>Rhythms</td>
<td>28.8</td>
<td>4.65</td>
<td>S-G</td>
</tr>
<tr>
<td>Minimum of two individual-dual sports</td>
<td>26.1</td>
<td>3.39</td>
<td>S-G</td>
</tr>
<tr>
<td>More than three team sports</td>
<td>9.6</td>
<td>1.45</td>
<td>NS</td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>5.5</td>
<td>.71</td>
<td>NS</td>
</tr>
<tr>
<td>Weight training</td>
<td>53.4</td>
<td>6.39</td>
<td>S-B***</td>
</tr>
<tr>
<td>Track and field</td>
<td>28.7</td>
<td>3.73</td>
<td>S-B</td>
</tr>
</tbody>
</table>

*NS signifies that the difference was not significant at the 5 per cent level.

**S-G signifies that the difference was significant at the 5 per cent level or better in favor of girls' programs.

***S-B signifies that the difference was significant at the 5 per cent level or better in favor of boys' programs.

As Table X shows, no significant difference was found between the percentage of Class 3A girls' and boys' programs which met the requirements for facilities and equipment, fitness appraisals, gymnastics, team sports, and conditioning exercises.
A significantly greater percentage of girls' programs met the requirements for body mechanics, rhythms, and individual-dual sports. The girls' percentage was 19.2 per cent higher than the boys' percentage for body mechanics, 28.8 per cent higher for rhythms, and 26.1 per cent higher for individual-dual sports. Each percentage was significant at better than the 1 per cent level.

The percentage of boys' programs which met the requirements for weight training and track and field was significantly higher than the girls' percentages. The boys' percentage was 53.4 per cent higher than the girls' percentage for weight training and was 28.7 per cent higher for track and field. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

Table XI shows each program area, the percentage difference between girls' and boys' programs, the $t$ value, and the findings of significant difference or no significant difference for the 92 Class 4A programs.

In Class 4A, the difference between girls' and boys' percentages in six of the program areas was significant at better than the 5 per cent level; therefore, the statistical hypothesis of no significant difference was rejected. The girls' percentage was significantly greater in three of these
six areas, while the boys' percentage was significantly greater in the other three. No significant difference was found between girls' and boys' programs in the remaining four areas; therefore, the statistical hypothesis of no significant difference was retained.

**TABLE XI**

**COMPARISONS BETWEEN CLASS 4A BOYS' AND GIRLS' PROGRAMS**

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Percentage Difference</th>
<th>t</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate facilities and equipment</td>
<td>0.0</td>
<td>0.00</td>
<td>NS*</td>
</tr>
<tr>
<td>Fitness appraisals</td>
<td>4.4</td>
<td>0.92</td>
<td>NS</td>
</tr>
<tr>
<td>Body mechanics</td>
<td>14.2</td>
<td>2.03</td>
<td>S-G**</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>10.9</td>
<td>1.75</td>
<td>NS</td>
</tr>
<tr>
<td>Rhythms</td>
<td>35.8</td>
<td>5.68</td>
<td>S-G</td>
</tr>
<tr>
<td>Minimum of two individual-dual sports</td>
<td>34.7</td>
<td>5.03</td>
<td>S-G</td>
</tr>
<tr>
<td>More than three team sports</td>
<td>11.9</td>
<td>1.98</td>
<td>S-B***</td>
</tr>
<tr>
<td>Conditioning exercises</td>
<td>11.9</td>
<td>1.65</td>
<td>NS</td>
</tr>
<tr>
<td>Weight training</td>
<td>57.6</td>
<td>8.35</td>
<td>S-B</td>
</tr>
<tr>
<td>Track and field</td>
<td>30.5</td>
<td>4.24</td>
<td>S-B</td>
</tr>
</tbody>
</table>

*NS signifies that the difference was not significant at the 5 per cent level.

**S-G signifies that the difference was significant at the 5 per cent level or better in favor of girls' programs.

***S-B signifies that the difference was significant at the 5 per cent level or better in favor of boys' programs.

As Table XI shows, no significant difference was found between the percentage of girls' and boys' programs which
met the minimum requirements for facilities and equipment, fitness appraisals, gymnastics, and conditioning exercises.

A significantly greater percentage of girls' programs met the requirements for body mechanics, rhythms, and individual-dual sports. The girls' percentage was 14.2 per cent higher than the boys' percentage for body mechanics, 35.8 per cent higher for rhythms, and 34.7 per cent higher for individual-dual sports. The percentage for body mechanics was significant at better than the 5 per cent level, while the other two were significant at better than the 1 per cent level.

The percentage of boys' programs which met the requirements for team sports, weight training, and track and field was significantly higher than the girls' percentages. The boys' percentage was 11.9 per cent higher than the girls' percentage for team sports, 37.6 per cent higher for weight training, and 30.5 per cent higher for track and field. The percentage for team sports was significant at better than the 5 per cent level, while the other two were significant at better than the 1 per cent level.

Both boys' and girls' total percentages in each of the ten areas for all five classes may be seen in Appendix C.

Summary of Hypotheses

Hypothesis 3 stated that there is a significant difference between the programs of boys and girls. Hypothesis 3A
stated that a significantly greater percentage of girls' programs have adequate facilities and equipment for a balanced physical education program. There was no evidence to support this hypothesis.

Hypothesis 3B stated that a significantly greater percentage of girls' programs meet the recommended minimum requirements for fitness appraisals, training in body mechanics, gymnastics, rhythmic activities, and individual-dual sports.

The evidence obtained during the study did not support the hypothesis concerning fitness appraisals. No significant difference was found between the girls' and boys' percentages in any of the five classes.

The results supported the hypothesis concerning training in body mechanics in Class 3A and Class 4A programs only. No significant difference was found between the girls' and boys' percentages in Classes B, A, and 2A. In Class 3A the girls' percentage was 19.2 per cent higher than the boys' percentage and was significant at better than the 1 per cent level. In Class 4A the girls' percentage was 14.2 per cent higher than the boys' percentage and was significant at better than the 5 per cent level.

The hypothesis concerning gymnastics was not supported by the survey results. No significant difference was found
between girls' and boys' percentages in any of the five classes.

The findings supported the hypothesis concerning rhythmic activities in all classes except Class B. No significant difference was found between boys' and girls' percentages in this class. The girls' percentage was 6.1 per cent higher than the boys' percentage in Class A and was significant at better than the 5 per cent level. The difference between girls' and boys' percentages in Classes 2A, 3A, and 4A was significant at better than the 1 per cent level, in favor of girls' programs in each case.

The evidence supported the hypothesis concerning individual-dual sports in Classes 2A, 3A, and 4A. No significant difference was found between the girls' and boys' programs in Classes B and A. The difference between girls' and boys' percentages in Classes 2A, 3A, and 4A was significant at better than the 1 per cent level, in favor of girls' programs.

Hypothesis 3C stated that a significantly greater percentage of girls' programs offer a variety of more than three team sports. The survey results did not support this hypothesis. The reverse proved to be true in three classes. No significant difference was found between girls' and boys' programs in Classes 2A and 3A. In Classes B, A, and 4A the boys' percentage was significantly higher than the girls'
percentage. The percentage difference was significant at better than the 1 per cent level in Classes B and A and better than the 5 per cent level in Class 4A.

Hypothesis 3D stated that a significantly greater percentage of boys' programs meet the recommended minimum requirements for conditioning exercises, weight training, and track and field.

The findings supported the hypothesis concerning conditioning exercises in Class B only. No significant difference was found between girls' and boys' programs in Classes A, 2A, 3A, and 4A. In Class B, the boys' percentage was 10.3 per cent higher than the girls' percentage and was significant at better than the 1 per cent level.

The evidence supported the hypothesis concerning weight training and track and field. The boys' percentages were significantly higher in each of the five classes for both these areas. The percentage difference in each case was significant at better than the 1 per cent level.

Certain Administrative Practices

Seven items of the questionnaire were concerned with administrative practices which affect the physical education program. These items are not related to the hypotheses of this study; however, the information secured with them is relevant. Five of the items were included in the general section of the questionnaire and were answered by only one
teacher from each of the 790 sample schools. The two other items were included in both the girls' and boys' sections in order to obtain separate information.

The first of the items was concerned with the number of semesters of physical education required for graduation. Responses to this question ranged from two to eight semesters. Table XII shows the number of teachers which reported the various semester requirements in each of the five classes.

**TABLE XII**

**PHYSICAL EDUCATION SEMESTER GRADUATION REQUIREMENTS REPORTED BY THE HIGH SCHOOL TEACHERS**

<table>
<thead>
<tr>
<th>School Class</th>
<th>Number of Teachers Reporting the Semester Requirements, Which Ranged from Two through Eight</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>A</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>2A</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>3A</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>4A</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>34</td>
</tr>
</tbody>
</table>

As indicated in Table XII, four semesters of physical education were required most frequently by the total sample. The four-semester requirement was reported most often by all classes except Class B, which required eight semesters.
frequently. The eight-semester requirement ranked second for the total sample. The results showed that 45 per cent of the 790 schools required from five to eight semesters of physical education, while the remaining 55 per cent required the minimum four semesters or less. Sixty teachers reported only two semesters required which is less than the Texas Education Agency requirement.

The second item dealt with the substitution of band, chorus, and other activities for physical education. A total of 421 teachers, which represents 53.3 per cent of the sample, revealed that substitution of such activities for physical education was allowed in their program. This overall percentage would have been much higher if the Class B results had been eliminated. Only 25.3 per cent of the Class B teachers reported that this substitution was allowed. In the remaining four classes the percentage of schools employing this practice increased with class size, ranging from 62.8 per cent in Class A to 85.8 per cent in Class 4A.

The third item asked if boys and girls share the same gymnasium. A total of 667 teachers answered yes. Again, school size was related to this situation. Over 90 per cent of the Class B and Class A teachers reported only one gymnasium. In the remaining classes, 85.2 per cent of the Class 2A teachers, 76.7 per cent of the Class 3A teachers,
and 53.2 per cent of the Class 4A teachers reported that boys and girls shared the same gymnasium.

The fourth item was concerned with whether the school provided a written course of study for physical education. Only 270 of the respondents indicated that a course of study was provided. Once again, this item was related to school size. The proportion of schools which provided a course of study ranged from 22.7 per cent in Class B to 68.4 per cent in Class 4A.

The fifth item requested the respondent to check the number of class periods per week devoted to physical education by each student. The responses ranged from one to five class periods weekly. Table XIII shows the number of

TABLE XIII
WEEKLY CLASS PERIOD REQUIREMENTS REPORTED
BY THE HIGH SCHOOL TEACHERS

<table>
<thead>
<tr>
<th>School Class</th>
<th>Number of Teachers Reporting the Period Requirements Which Ranged from One through Five</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>2A</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>3A</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4A</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>3</td>
</tr>
</tbody>
</table>
teachers which reported the various weekly class period requirements in each of the five classes.

As seen in Table XIII, 694 of the responding teachers indicated that each student devoted five periods each week to physical education. This total represents a majority of the schools in each of the five classes. A total of ninety-six of the teachers indicated that their students devoted less than five periods each week to physical education. Twenty-five schools provided only one or two periods weekly.

The sixth item was concerned with the normal enrollment in physical education classes and was answered in both the girls' and boys' sections of the questionnaire. The respondents were asked to check one of three answers which were as follows: less than thirty-five, thirty-six to fifty, or more than fifty. Table XIV shows the number of teachers which checked the various answers in each of the five classes.

As indicated in Table XIV, the most common enrollment for the total sample was less than thirty-five students. However, in the class breakdown this was true only for Classes B, A, and 2A. The most common enrollment in Classes 3A and 4A was thirty-six to fifty students. Overall, 303 girls' programs and 293 boys' programs had class enrollments that exceeded thirty-five students.
TABLE XIV
NORMAL CLASS ENROLLMENT FOR PHYSICAL EDUCATION

<table>
<thead>
<tr>
<th>School Class</th>
<th>Number of Teachers Reporting the Various Enrollment Ranges</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less Than 35</td>
<td>36-50</td>
</tr>
<tr>
<td>B</td>
<td>252</td>
<td>52</td>
</tr>
<tr>
<td>A</td>
<td>107</td>
<td>51</td>
</tr>
<tr>
<td>2A</td>
<td>96</td>
<td>38</td>
</tr>
<tr>
<td>3A</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td>4A</td>
<td>9</td>
<td>62</td>
</tr>
<tr>
<td>Total</td>
<td>487</td>
<td>239</td>
</tr>
</tbody>
</table>

The last item requested the teachers to indicate whether the physical education period was used as a practice period for Interscholastic League Basketball and was included in both the girls' and boys' sections of the questionnaire. Table XV shows the number of teachers in each class which reported using the physical education period as a practice period for basketball.

Table XV shows that this practice was more common in small schools than in large schools. The practice was also more common in girls' programs than in boys' programs among the small schools. A total of 401 girls' teachers and 381 boys' teachers reported this practice. Of this group, 347 of the girls' teachers and 314 of the boys' teachers were reporting for Classes B and A.
TABLE XV
USE OF THE PHYSICAL EDUCATION PERIOD AS A PRACTICE PERIOD FOR BASKETBALL

<table>
<thead>
<tr>
<th>School Class</th>
<th>Number of Girls' Teachers Reporting This Practice</th>
<th>Number of Boys' Teachers Reporting This Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>265</td>
<td>248</td>
</tr>
<tr>
<td>A</td>
<td>82</td>
<td>66</td>
</tr>
<tr>
<td>2A</td>
<td>40</td>
<td>35</td>
</tr>
<tr>
<td>3A</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>4A</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>401</td>
<td>381</td>
</tr>
</tbody>
</table>

Summary

The survey results were used to determine the percentage of the 790 schools which met the recommended minimum requirements in each of the ten areas of the physical education program. These percentages were used to determine the tenability of the three major hypotheses of this study.

The results supported hypothesis 1 in each of the ten areas for both girls' and boys' programs. Less than 90 per cent of the sample met the minimum requirements in each of the ten areas. In girls' programs, the percentage meeting the minimum requirements ranged from a low of 8.6 per cent for gymnastics to a high of 73.4 per cent for fitness appraisals. In boys' programs, the percentages ranged from a low of 4.1 per cent for rhythms to a high of 78.2 per cent for team sports.
The findings supported hypothesis 2 in seven of the ten areas for girls' programs and in five of the ten areas for boys' programs. In girls' programs, a significantly greater percentage of large schools met the minimum requirements for adequate facilities and equipment, fitness appraisals, gymnastics, rhythms, individual-dual sports, and team sports. A significantly greater percentage of small schools met the minimum requirements for weight training. No significant difference was found between large and small school percentages for teaching body mechanics, track and field, and conditioning exercises. In boys' programs, a significantly greater percentage of large schools met the minimum requirements for adequate facilities and equipment, fitness appraisals, gymnastics, individual-dual sports, and team sports. No significant difference was found between large and small school percentages for teaching body mechanics, rhythms, track and field, conditioning exercises, and weight training.

The evidence supported hypothesis 3 in certain areas only. In Class B a significantly greater percentage of boys' programs met the minimum requirements for team sports, conditioning exercises, weight training, and track and field. No significant difference was found between girls' and boys' percentages in the remaining six areas.
In Class A, a significantly greater percentage of girls' programs met the minimum requirements for rhythms, while a significantly greater percentage of boys' programs met the requirements for team sports, weight training, and track and field. No significant difference was found between girls' and boys' percentages in the remaining six areas.

In Class 2A, a significantly greater percentage of girls' programs met the minimum requirements for rhythms and individual-dual sports, while a significantly greater percentage of boys' programs met the requirements for weight training and track and field. No significant difference was found between girls' and boys' percentages in the remaining six areas.

In Class 3A, a significantly greater percentage of girls' programs met the minimum requirements for teaching body mechanics, rhythms, and individual-dual sports. A significantly greater percentage of boys' programs met the requirements for weight training and track and field. No significant difference was found between girls' and boys' percentages in the remaining five areas.

In Class 4A, a significantly greater percentage of girls' programs met the minimum requirements for teaching body mechanics, rhythms, and individual-dual sports. A significantly greater percentage of boys' programs met the requirements for team sports, weight training, and track and
field. No significant difference was found between girls' and boys' percentages in the remaining four areas.

A detailed summary of the entire study is presented in Chapter V. The conclusions and recommendations are included.
CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS
AND RECOMMENDATIONS

Summary

The first purpose of this study was to determine whether the physical education programs of Texas high schools met the recommended minimum requirements of the Texas Education Agency in the following areas:

1. Appraisal of fitness
2. Body mechanics
3. Conditioning exercises
4. Gymnastics
5. Weight training (modified for girls)
6. Rhythms
7. Minimum of two team sports
8. Minimum of two individual-dual activities
9. Track and field

The second purpose of this study was to determine whether the small high schools in Texas were meeting the recommended minimum requirements of the Texas Education Agency to the same degree as large Texas schools.

The third purpose of this study was to determine whether the boys' physical education programs in Texas high schools
were meeting the recommended minimum requirements of the Texas Education Agency to the same degree as girls' programs.

The instrument used to secure the information for this study was a questionnaire, which was based on the nine components of the physical education program recommended by the Texas Education Agency. This questionnaire was employed in a pilot study which was conducted during the fall term, 1963, and the results were used to refine and test the reliability of this instrument. The refined questionnaire was then sent to the physical education teachers of the 1105 Texas high schools which make up the five Interscholastic League classes. Completed questionnaires were received from 790 high schools, representing 72 per cent of the total number.

In order to find the proportion meeting recommended minimum requirements, the responses to the questionnaires were tabulated and placed in categorical divisions. The standard error of a sample percentage was used to estimate the true percentage of all high schools which met the recommended minimum requirements. The standard error of the difference between two independent percentages was used to test the difference between the percentage of small and large schools and the percentage of girls' and boys' programs which met the recommended minimum requirements. The results were used to determine the tenability of the three
major hypotheses of this study, which were based on the three purposes stated above.

Hypothesis I stated that less than 90 per cent of the responding schools meet the recommended minimum requirements for the following: (A) fitness appraisals, (B) body mechanics, (C) conditioning exercises, (D) gymnastics, (E) weight training, (F) rhythms, (G) a variety of more than three team sports, (H) individual-dual sports, (I) track and field, and (J) adequate facilities and equipment for a balanced physical education program. The evidence obtained in this study supported hypothesis I in all ten areas.

The survey results showed that 73.4 per cent of the girls' programs met the recommended minimum requirements for hypothesis IA, 66.4 per cent for hypothesis IB, 59.3 per cent for hypothesis IC, 8.6 per cent for hypothesis ID, 12.4 per cent for hypothesis IE, 14 per cent for hypothesis IF, 59.6 per cent for hypothesis IG, 50.8 per cent for hypothesis IH, and 48.9 per cent for hypothesis II.

The results also indicated that 74.3 per cent of the boys' programs met the recommended minimum requirements for hypothesis IA, 61.5 per cent for hypothesis IB, 64.6 per cent for hypothesis IC, 11.2 per cent for hypothesis ID, 64.9 per cent for hypothesis IE, 4.1 per cent for hypothesis IF, 78.2 per cent for hypothesis IG, 59.5 per cent for hypothesis IH, and 73.4 per cent for hypothesis II. In
addition, the findings revealed that 24.9 per cent of the responding schools qualified in hypothesis 1J.

Hypothesis 2 stated that there is a significant difference between the programs of large and small schools. Hypothesis 2A stated that a significantly greater percentage of large schools have adequate facilities and equipment for a balanced physical education program. The evidence obtained during this study supported this hypothesis. The large school percentage was 13.1 per cent higher than the small school percentage and was significant at better than the 1 per cent level.

Hypothesis 2B stated that a significantly greater percentage of large schools meet the recommended minimum requirements for fitness appraisals, training in body mechanics, gymnastics, rhythmic activities, individual-dual sports, and track and field. The results of the study did not support the hypothesis concerning the teaching of body mechanics and track and field for either boys' or girls' programs.

The evidence obtained supported the hypothesis concerning fitness appraisals for both boys' and girls' programs. The large school girls' percentage was 18.2 per cent higher than the small school percentage, while the large school boys' percentage was 16.7 per cent higher than the small school percentage. The difference was significant at
better than the 1 per cent level in both the boys' and girls' programs.

The findings supported the hypothesis concerning gymnastics for both boys' and girls' programs. The girls' large school percentage was 9 per cent higher than the small school percentage. The boys' large school percentage was 14.1 per cent higher than the small school percentage. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

The evidence obtained supported the hypothesis concerning rhythmic activities for girls' programs but did not for boys' programs. The girls' large school percentage was 20.4 per cent higher than the small school percentage and was significant at better than the 1 per cent level.

The survey results supported the hypothesis concerning individual-dual sports for both boys' and girls' programs. The girls' large school percentage was 38.7 per cent higher than the small school percentage, while the boys' large school percentage was 16.1 per cent higher than the small school percentage. The difference was significant at better than the 1 per cent level in both the boys' and girls' programs.

Hypothesis 2C stated that a significantly greater percentage of large schools offer a variety of more than three team sports. The evidence supported this hypothesis for
both boys' and girls' programs. The girls' large school percentage was 22.6 per cent higher than the small school percentage and was significant at better than the 1 per cent level. The boys' large school percentage was 7 per cent higher than the small school percentage and was significant at better than the 5 per cent level.

Hypothesis 2D stated that a significantly greater percentage of small schools meet the recommended minimum requirements for conditioning exercises and weight training. The results of the study did not support the hypothesis concerning conditioning exercises for either boys' or girls' programs. The evidence supported the hypothesis concerning weight training for girls but not for boys. The small school girls' percentage was 5.2 per cent higher than the large school percentage and was significant at better than the 5 per cent level.

Hypothesis 3 stated that there is a significant difference between the programs of boys and girls. Hypothesis 3A stated that a significantly greater percentage of girls' programs have adequate facilities and equipment for a balanced physical education program. There was no evidence to support this hypothesis.

Hypothesis 3B stated that a significantly greater percentage of girls' programs meet the recommended minimum requirements for fitness appraisals, training in body
mechanics, gymnastics, rhythmic activities, and individual-dual sports. The evidence obtained during the study did not support the hypothesis concerning fitness appraisals and gymnastics.

The results supported the hypothesis concerning training in body mechanics in Classes 3A and 4A programs only. In Class 3A, the girls' percentage was 19.2 per cent higher than the boys' percentage and was significant at better than the 1 per cent level. In Class 4A, the girls' percentage was 14.2 per cent higher than the boys' percentage and was significant at better than the 5 per cent level.

The findings supported the hypothesis concerning rhythmic activities in all classes except Class B. The girls' percentage was 6.1 per cent higher than the boys' percentage in Class A and was significant at better than the 5 per cent level. The difference between girls' and boys' percentages in Classes 2A, 3A, and 4A was significant at better than the 1 per cent level in favor of girls' programs.

The evidence supported the hypothesis concerning individual-dual sports in Classes 2A, 3A, and 4A. In each case, the difference between girls' and boys' percentages was significant at better than the 1 per cent level in favor of girls' programs.

Hypothesis 3C stated that a significantly greater percentage of girls' programs offer a variety of more than
three team sports. The survey results did not support this hypothesis. The reverse proved to be true in three classes. No significant difference was found between girls' and boys' programs in Classes 2A and 3A. In Classes B, A, and 4A the boys' percentage was significantly higher than the girls' percentage.

Hypothesis 3D stated that a significantly greater percentage of boys' programs meet the recommended minimum requirements for conditioning exercises, weight training, and track and field. The findings supported the hypothesis concerning conditioning exercises in Class B only. In Class B, the boys' percentage was 10.3 per cent higher than the girls' percentage and was significant at better than the 1 per cent level.

The evidence supported the hypothesis concerning weight training and track and field. The boys' percentages were significantly higher in each of the five classes for both areas. In each case, the percentage difference was significant at better than the 1 per cent level.

Seven items of the questionnaire were concerned with various administrative practices which affect the physical education program. The first item was concerned with the number of semesters of physical education required for graduation. The four-semester requirement was reported most often by all classes except Class B which required eight
semesters most frequently. The second item revealed that 53.3 per cent of the sample allowed substitution of other activities for physical education. The results of the third item showed that a total of 667 of the 790 responding schools had only one gymnasium. The fourth item revealed that a written course of study for physical education was provided in only 270 of the responding schools. The fifth item showed that 694 of the responding schools devoted five periods weekly to physical education. The results of the sixth item revealed that the most common class enrollment for Classes B, A, and 2A was less than thirty-five students. The most common enrollment in Classes 3A and 4A was thirty-six to fifty students. The last item dealt with the use of the physical education period as a practice period for Interscholastic League Basketball. This practice was reported by 401 of the girls' teachers and 381 of the boys' teachers. The results showed that this practice was more common in small schools than in large schools.

Conclusions

The findings of this study made it possible to reach the following conclusions about the physical education programs of the Texas high schools used in this research:

1. A majority of the high schools are not meeting the recommended minimum requirements of the Texas Education Agency. Program quantity and quality are lacking in a
majority of the schools' programs that were compared to the recommended requirements.

2. Large schools are meeting the recommended minimum requirements to a greater degree than small schools. Pupils in a majority of the small schools are not being given the opportunity to participate in sports other than the traditional team sports.

3. Girls' programs are meeting the recommended minimum requirements for rhythms and individual-dual sports to a greater degree than boys' programs, whereas boys' programs are meeting the requirements to a greater degree for weight training and track and field. Differences between girls' and boys' programs in the other program areas are not clear-cut, except on a class-by-class basis.

4. The traditional team sports, basketball, softball, and volleyball, are included in both boys' and girls' programs more often than other sports activities. Therefore, the needs and interests of a great many students are not being fully met.

5. Girls are being prevented from having many physical activities which boys have in Class B schools. Boys have more opportunities than girls to participate in such activities as conditioning exercises, weight training, track and field, and a variety of team sports. This advantage for boys is apparently due to the common practice of having one
male teacher for both boys' and girls' physical education in Class B schools.

6. A number of schools, by failing to require two units of physical education for graduation, are not providing the minimum curriculum to which their students are entitled.

7. Many students are not receiving the benefits of physical education in high school due to the substitution of band and other similar activities.

8. Physical education activities in a majority of the large schools are restricted due to excessive class enrollment.

9. Physical education activities in a majority of the small schools are restricted due to use of the physical education period as a practice period for Interscholastic League Basketball.

10. A combination of factors is responsible for the failure of many high schools to meet the recommended minimum requirements for physical education; however, the major restrictive factors are the lack of adequate facilities and the lack of equipment in a majority of the high schools.

11. It appears that many high school teachers do not believe that a balanced physical education program has to include all the activities recommended by the Texas Education Agency. It also appears that the Texas Education Agency has not influenced the school officials which are
responsible for the physical education curriculum to a great extent at this point.

Implications

The evidence obtained from this study and the resulting conclusions imply that the following are needed to strengthen the physical education programs in Texas high schools:

1. Provide more funds for facilities and equipment.
2. Require small schools to provide physical education programs comparable to those in large schools. Additional local and state support is needed to accomplish this objective.
3. Increase the frequency of fitness appraisals and make a greater effort to provide a broader program of activities to correct the weaknesses that are discovered.
4. Place more emphasis on teaching those body skills that are related to everyday living. This could be done in both health classes and activity classes.
5. Increase the frequency of conditioning exercises and employ the "speed principle" when feasible.
6. Include more opportunities for weight training in girls' programs.
7. Place more emphasis on such activities as gymnastics, rhythms, and individual-dual sports.
3. Provide more opportunities for participation in team sports other than the traditional sports—basketball, softball, and volleyball.

9. Include more track and field activities for girls.

10. Require four units of physical education for graduation in all schools to keep many students in physical fitness activities over a longer period of time.

11. Eliminate the practice of substituting band and other activities for physical education.

12. Provide a written course of study for physical education that would coordinate activities in the elementary, junior high, and senior high schools.

13. Require five periods of physical education weekly in all schools. This would increase the opportunity to participate in physical training activities for many students.

14. Keep class enrollments to thirty-five students or less. The problem of excessive enrollment can be eliminated only with increased facilities in large schools.

15. Discontinue using the physical education period as a practice period for Interscholastic League Basketball.

16. Provide women teachers for girls' physical education in all schools.

The findings of this study imply that a need exists for more coordination and supervision of physical education at
the state level. Programs not only vary widely from class to class but also vary a great deal within each class.

Recommendations

Accreditation teams should use the standards employed in this study to investigate the physical education programs of Texas high schools. However, such investigations should go further by checking the actual scope of the activities included in high school programs.

Further studies conducted on an area basis with a relatively small number of schools would provide additional information about the activities covered in this study. The use of a small number of schools in one area would make personal visitations possible. Observation coupled with personal interviews with physical education teachers would give greater insight into the actual scope of the activities reported by teachers in this study.

A follow-up study similar to this study should be conducted after a period of time to determine what progress has been made in Texas high school physical education.
October 1, 1964

Dear Colleagues:

I should like to introduce to you a study which is being made, with the purpose to evaluate the Texas High School Physical Education Program.

This study is being made by Melvin L. Norris, at North Texas State University, Denton, Texas. Mr. Norris has arranged the attached questionnaire into three sections: The Boys Section, The Girls Section and The General Section. Mr. Norris suggests each section of the questionnaire be checked by either the man or woman, physical education teacher and then be handed to the other to complete. Either the man or woman may complete the General Section. In schools where one person teaches both boys and girls, this person should complete the questionnaire in its entirety. The questionnaire is constructed so you may indicate your response by placing a check (✓) in the appropriate places. The program is to be evaluated on a state wide basis with no reference made to any individual school; therefore, names of schools and persons contributing may be omitted.

The Texas Association for Health, Physical Education and Recreation has been concerned about the physical education program in Texas Public Schools. It has held several conferences and workshops wherein the united thinking and planning of the physical education people in Texas has made significant contributions to the Texas program. This study should give added information which can be used to further improve the high school phase. I should like to urge you to add to the contributions, you and others have already made to the Texas program, by completing and returning the attached questionnaire. It would be most helpful if you can do this within 10 days.

Mr. Norris has enclosed a stamped, self-addressed envelope for your convenience.
I hope to see you in Austin, December 3-5.

Sincerely,

Dess Cearley
President - TAHPER
Texas Membership Director - AAHPER

JC:1h
APPENDIX B

The following is a copy of the questionnaire which was sent to the physical education teachers in Texas high schools to obtain the information for this study.

**General**

1. Check classification of your school.
   (1) ___AAAA (2) ___AAA (3) ___AA (4) ___A (5) ___B

2. Check number of semester of physical education required for graduation.
   (1) ___2 (2) ___3 (3) ___4 (4) ___5 (5) ___6
   (6) ___7 (7) ___8

3. Are students in your school allowed to substitute band, chorus, or other activities for physical education?
   (1) ___yes (2) ___no

4. Do boys and girls share the same gymnasium?
   (1) ___yes (2) ___no

5. Does your school provide a written course of study for physical education?
   (1) ___yes (2) ___no

6. Check number of class periods per week devoted to physical education by each student.
   (1) ___1 (2) ___2 (3) ___3 (4) ___4 (5) ___5

7. Does your school provide adequate facilities and equipment for a well-rounded physical education program?
   (1) ___yes (2) ___no

**Girls' Physical Education**

1. Check normal enrollment in your physical education classes.
   (1) ___Less than 35 (2) ___36-50 (3) ___More than 50
2. Check number of times physical fitness tests are given to all girls each school year.
   (1) _none (2) _1 (3) __2 (4) __3 or more

3. Which of the following tests do you use?
   (1) __AAHPER Youth Fitness (2) __other standardized tests (3) __your own tests

4. If you use your own tests, do they include at least one test of cardio-vascular-respiratory endurance?
   (1) __yes (2) __no

5. If you use your own tests, do they include at least one test of muscular strength and endurance?
   (1) __yes (2) __no

6. Is training in body mechanics a component of your program?
   (1) __yes (2) __no

7. Is specific instruction given in the fundamental movements used in sports such as running, jumping, throwing, catching, and falling?
   (1) __yes (2) __no

8. Is specific instruction given in the fundamental movements used in everyday living such as walking, sitting and rising, lifting, pushing, and pulling?
   (1) __yes (2) __no

9. Are conditioning exercises included in your program?
   (1) __yes (2) __no

10. If the above answer is yes, check the number of times exercises are given each week.
    (1) __1 (2) __2 (3) __3 (4) __4 (5) __5

11. How many minutes do you spend on conditioning exercises each class period?
    (1) __8 or less (2) __8 to 12 (3) __more than 12

12. Do you employ the "speed principle" whereby the students perform the exercises as rapidly as possible within a prescribed time?
    (1) __yes (2) __no

13. Do you have a gymnastics unit in your program?
    (1) __yes (2) __no
14. If the above answer is yes, check the number of weeks scheduled for the unit.
   (1) ___ 3 or less  (2) ___ 4 to 6  (3) ___ 7 to 9

15. Does the unit include stunts on the horizontal bar?
   (1) ___ yes  (2) ___ no

16. Does the unit include stunts on the parallel bars?
   (1) ___ yes  (2) ___ no

17. Does the unit include stunts on the long or side horse?
   (1) ___ yes  (2) ___ no

18. Does the unit include stunts on the flying rings?
   (1) ___ yes  (2) ___ no

19. Does the unit include stunts on the trampoline?
   (1) ___ yes  (2) ___ no

20. Does the unit include use of the balance beam?
    (1) ___ yes  (2) ___ no

21. Do you have a tumbling unit in your program?
    (1) ___ yes  (2) ___ no

22. If the above answer is yes, check the number of weeks scheduled for the unit.
    (1) ___ 3 or less  (2) ___ 4 to 6  (3) ___ 7 to 9

23. Do you provide a program of modified weight training for girls in your physical education classes?
    (1) ___ yes  (2) ___ no

24. If the above answer is yes, check the number of periods per week each girl participates.
    (1) ___ 1  (2) ___ 2  (3) ___ 3  (4) ___ 4  (5) ___ 5

25. Are rhythms a component of your program?
    (1) ___ yes  (2) ___ no

26. If so, do these include folk dances?
    (1) ___ yes  (2) ___ no

27. Do these include modern dances?
    (1) ___ yes  (2) ___ no

28. Are team sports a component of your program?
    (1) ___ yes  (2) ___ no
29. If the above answer is yes, check the number of team sports included in your program this school year.
   (1) ___ 1  (2) ___ 2  (3) ___ 3  (4) ___ 4  (5) ___ 5  (6) ___ 6  (7) ___ 7  (8) ___ 8  (9) ___ more than 8

30. Does your program include basketball?
   (1) ___ yes  (2) ___ no

31. Does your program include field hockey?
   (1) ___ yes  (2) ___ no

32. Does your program include soccer?
   (1) ___ yes  (2) ___ no

33. Does your program include softball?
   (1) ___ yes  (2) ___ no

34. Does your program include speedball?
   (1) ___ yes  (2) ___ no

35. Does your program include volleyball?
   (1) ___ yes  (2) ___ no

36. Do you provide instruction in the various skills needed in your team sports?
   (1) ___ yes  (2) ___ no

37. Do you use your physical education period as a work out period for Girls' Interscholastic League Basketball?
   (1) ___ yes  (2) ___ no

38. Are individual sports a component of your program? (Do not include Interscholastic League golf.)
   (1) ___ yes  (2) ___ no

39. If the above answer is yes, check the number of individual sports included in your program each year.
   (1) ___ 1  (2) ___ 2  (3) ___ 3  (4) ___ 4  (5) ___ 5  (6) ___ more than 5

40. Are dual sports a component of your program? (Do not include Interscholastic League tennis.)
   (1) ___ yes  (2) ___ no

41. If the above answer is yes, check the number of dual sports included in your program each year.
   (1) ___ 1  (2) ___ 2  (3) ___ 3  (4) ___ 4  (5) ___ 5  (6) ___ more than 5
42. Does your program include archery?
   (1) ___yes (2) ___no

43. Does your program include badminton?
   (1) ___yes (2) ___no

44. Does your program include bowling?
   (1) ___yes (2) ___no

45. Does your program include golf?
   (1) ___yes (2) ___no (3) ___Interscholastic League
      players only

46. Does your program include tennis?
   (1) ___yes (2) ___no (3) ___Interscholastic League
      players only

47. Do you provide instruction in the various skills needed
    in your individual and dual sports?
   (1) ___yes (2) ___no

48. Do you have a track and field unit in your program?
   (1) ___yes (2) ___no (3) ___track only

49. Does your school provide the facilities and equipment
    that would be needed for the comprehensive girls' pro-
    gram covered in this questionnaire?
   (1) ___yes (2) ___no

Boys' Physical Education

1. Check normal enrollment in your physical education
   classes.
   (1) ___less than 35 (2) ___36-50 (3) ___more than 50

2. Check number of times physical fitness tests are given
   to all boys each school year.
   (1) ___none (2) ___1 (3) ___2 (4) ___3 or more

3. Which of the following tests do you use?
   (1) ___AAHPER Youth Fitness (2) ___other standardized
   tests (3) ___your own tests

4. If you use your own tests, do they include at least one
   test of cardio-vascular-respiratory endurance?
   (1) ___yes (2) ___no
5. If you use your own tests, do they include at least one test of muscular strength and endurance?  
   (1) yes (2) no

6. Is training in body mechanics a component of your program?  
   (1) yes (2) no

7. Is specific instruction given in the fundamental movements used in sports such as running, jumping, throwing, catching, and falling?  
   (1) yes (2) no

8. Is specific instruction given in the fundamental movements used in everyday living such as walking, sitting and rising, lifting, pushing, and pulling?  
   (1) yes (2) no

9. Are conditioning exercises included in your program?  
   (1) yes (2) no

10. If the above answer is yes, check the number of times exercises are given each week.  
    (1) 1 (2) 2 (3) 3 (4) 4 (5) 5

11. How many minutes do you spend on conditioning exercises each class period?  
    (1) 8 or less (2) 8 to 12 (3) more than 12

12. Do you employ the "speed principle" whereby the students perform the exercises as rapidly as possible within a prescribed time?  
    (1) yes (2) no

13. Do you have a gymnastics unit in your program?  
    (1) yes (2) no

14. If the above answer is yes, check the number of weeks scheduled for the unit.  
    (1) 3 or less (2) 4 to 6 (3) 7 to 9

15. Does the unit include stunts on the horizontal bar?  
    (1) yes (2) no

16. Does the unit include stunts on the parallel bars?  
    (1) yes (2) no

17. Does the unit include stunts on the long or side horse?  
    (1) yes (2) no
18. Does the unit include stunts on the flying rings?
   (1) ___yes (2) ___no

19. Does the unit include stunts on the trampoline?
   (1) ___yes (2) ___no

20. Does the unit include use of the balance beam?
   (1) ___yes (2) ___no

21. Do you have a tumbling unit in your program?
   (1) ___yes (2) ___no

22. If the above answer is yes, check the number of weeks
    scheduled for the unit.
   (1) ___3 or less (2) ___4 to 6 (3) ___7 to 9

23. Do you provide a program of weight training for boys in
    your physical education classes.
   (1) ___yes (2) ___no

24. If the above answer is yes, check the number of periods
    per week each boy participates.
   (1) ___1 (2) ___2 (3) ___3 (4) ___4 (5) ___5

25. Are rhythms a component of your program?
   (1) ___yes (2) ___no

26. If so, do these include folk dances?
   (1) ___yes (2) ___no

27. Are team sports a component of your program?
   (1) ___yes (2) ___no

28. If the above answer is yes, check the number of team
    sports included in your program this school year.
   (1) ___1 (2) ___2 (3) ___3 (4) ___4 (5) ___5
   (6) ___6 (7) ___7 (8) ___8 (9) ___more than 8

29. Does your program include basketball?
   (1) ___yes (2) ___no

30. Does your program include field hockey?
   (1) ___yes (2) ___no

31. Does your program include soccer?
   (1) ___yes (2) ___no

32. Does your program include softball?
   (1) ___yes (2) ___no
33. Does your program include speedball?
   (1) ___yes (2) ___no

34. Does your program include volleyball?
   (1) ___yes (2) ___no

35. Do you provide instruction in the various skills needed in your team sports?
   (1) ___yes (2) ___no

36. Do you use your physical education period as a work out period for Boys' Interscholastic League Basketball?
   (1) ___yes (2) ___no

37. Are individual sports a component of your program? (Do not include Interscholastic League golf.)
   (1) ___yes (2) ___no

38. If the above answer is yes, check the number of individual sports included in your program each year.
   (1) ___1 (2) ___2 (3) ___3 (4) ___4 (5) ___5
   (6) ___more than 5

39. Are dual sports a component of your program? (Do not include Interscholastic League tennis.)
   (1) ___yes (2) ___no

40. If the above answer is yes, check the number of dual sports included in your program each year.
   (1) ___1 (2) ___2 (3) ___3 (4) ___4 (5) ___5
   (6) ___more than 5

41. Does your program include archery?
   (1) ___yes (2) ___no

42. Does your program include badminton?
   (1) ___yes (2) ___no

43. Does your program include bowling?
   (1) ___yes (2) ___no

44. Does your program include golf?
   (1) ___yes (2) ___no (3) ___Interscholastic League players only

45. Does your program include tennis?
   (1) ___yes (2) ___no (3) ___Interscholastic League players only
46. Do you provide instruction in the various skills needed in your individual and dual sports?
   (1) ___yes (2) ___no

47. Do you have a track and field unit in your program?
   (1) ___yes (2) ___no (3) ___Interscholastic League team only

48. Does your school provide the facilities and equipment that would be needed for the comprehensive boys' program covered in this questionnaire?
   (1) ___yes (2) ___no
**APPENDIX C**

The following tables show the percentage of responding schools in each class which met the recommended minimum requirements for each of the ten areas of the physical education program covered in this study.

**TABLE XVI**

PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR FITNESS APPRAISALS

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>61.8</td>
<td>64.4</td>
</tr>
<tr>
<td>A</td>
<td>74.3</td>
<td>73.7</td>
</tr>
<tr>
<td>2A</td>
<td>81.6</td>
<td>81.2</td>
</tr>
<tr>
<td>3A</td>
<td>87.6</td>
<td>85.3</td>
</tr>
<tr>
<td>4A</td>
<td>85.8</td>
<td>90.2</td>
</tr>
</tbody>
</table>

**TABLE XVII**

PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR THE TEACHING OF BODY MECHANICS

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>62.1</td>
<td>65.0</td>
</tr>
<tr>
<td>A</td>
<td>67.0</td>
<td>60.3</td>
</tr>
<tr>
<td>2A</td>
<td>67.1</td>
<td>60.4</td>
</tr>
<tr>
<td>3A</td>
<td>73.9</td>
<td>54.7</td>
</tr>
<tr>
<td>4A</td>
<td>72.8</td>
<td>58.6</td>
</tr>
</tbody>
</table>
### TABLE XVIII

**PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR CONDITIONING EXERCISES**

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>54.1</td>
<td>64.4</td>
</tr>
<tr>
<td>A</td>
<td>62.8</td>
<td>59.7</td>
</tr>
<tr>
<td>2A</td>
<td>66.4</td>
<td>67.1</td>
</tr>
<tr>
<td>3A</td>
<td>64.3</td>
<td>69.8</td>
</tr>
<tr>
<td>4A</td>
<td>55.4</td>
<td>67.3</td>
</tr>
</tbody>
</table>

### TABLE XIX

**PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR GYMNASTICS**

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>4.8</td>
<td>5.7</td>
</tr>
<tr>
<td>A</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>2A</td>
<td>8.7</td>
<td>12.7</td>
</tr>
<tr>
<td>3A</td>
<td>19.1</td>
<td>21.9</td>
</tr>
<tr>
<td>4A</td>
<td>18.4</td>
<td>29.3</td>
</tr>
</tbody>
</table>

### TABLE XX

**PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR WEIGHT TRAINING**

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>11.2</td>
<td>58.6</td>
</tr>
<tr>
<td>A</td>
<td>20.7</td>
<td>71.5</td>
</tr>
<tr>
<td>2A</td>
<td>11.4</td>
<td>73.1</td>
</tr>
<tr>
<td>3A</td>
<td>12.3</td>
<td>65.7</td>
</tr>
<tr>
<td>4A</td>
<td>3.2</td>
<td>60.8</td>
</tr>
</tbody>
</table>
### TABLE XXI

PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR RHYTHMS

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>4.4</td>
<td>5.1</td>
</tr>
<tr>
<td>A</td>
<td>9.1</td>
<td>3.0</td>
</tr>
<tr>
<td>2A</td>
<td>13.4</td>
<td>2.6</td>
</tr>
<tr>
<td>3A</td>
<td>31.5</td>
<td>2.7</td>
</tr>
<tr>
<td>4A</td>
<td>42.3</td>
<td>6.5</td>
</tr>
</tbody>
</table>

### TABLE XXII

PERCENTAGE OF SCHOOLS WHICH OFFERED A VARIETY OF MORE THAN THREE TEAM SPORTS

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>45.1</td>
<td>75.0</td>
</tr>
<tr>
<td>A</td>
<td>60.9</td>
<td>76.2</td>
</tr>
<tr>
<td>2A</td>
<td>72.4</td>
<td>79.8</td>
</tr>
<tr>
<td>3A</td>
<td>75.3</td>
<td>84.9</td>
</tr>
<tr>
<td>4A</td>
<td>72.8</td>
<td>84.7</td>
</tr>
</tbody>
</table>

### TABLE XXIII

PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR INDIVIDUAL-DUAL SPORTS

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>27.8</td>
<td>28.5</td>
</tr>
<tr>
<td>A</td>
<td>50.0</td>
<td>41.4</td>
</tr>
<tr>
<td>2A</td>
<td>65.1</td>
<td>46.3</td>
</tr>
<tr>
<td>3A</td>
<td>80.8</td>
<td>54.7</td>
</tr>
<tr>
<td>4A</td>
<td>83.6</td>
<td>48.9</td>
</tr>
</tbody>
</table>
TABLE XXIV

PERCENTAGE OF SCHOOLS WHICH MET THE RECOMMENDED MINIMUM REQUIREMENTS FOR TRACK AND FIELD

<table>
<thead>
<tr>
<th>School Class</th>
<th>Girls' Programs</th>
<th>Boys' Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>50.6</td>
<td>68.5</td>
</tr>
<tr>
<td>A</td>
<td>53.6</td>
<td>76.8</td>
</tr>
<tr>
<td>2A</td>
<td>40.9</td>
<td>74.4</td>
</tr>
<tr>
<td>3A</td>
<td>53.4</td>
<td>82.1</td>
</tr>
<tr>
<td>4A</td>
<td>44.5</td>
<td>75.0</td>
</tr>
</tbody>
</table>

TABLE XXV

PERCENTAGE OF SCHOOLS WHICH HAD ADEQUATE FACILITIES AND EQUIPMENT

<table>
<thead>
<tr>
<th>School Class</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>18.5</td>
</tr>
<tr>
<td>A</td>
<td>21.9</td>
</tr>
<tr>
<td>2A</td>
<td>30.2</td>
</tr>
<tr>
<td>3A</td>
<td>34.2</td>
</tr>
<tr>
<td>4A</td>
<td>35.8</td>
</tr>
</tbody>
</table>
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