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Abstracts of dissertations and thesis pertaining to physical education submitted to Boston University School of Education between January 1953 and January 1959.

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Boston University

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BOSTON UNIVERSITY
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Thesis

ABSTRACTS OF DISSERTATIONS AND THESIS
PERTAINING TO PHYSICAL EDUCATION
SUBMITTED TO BOSTON UNIVERSITY
SCHOOL OF EDUCATION BETWEEN
JANUARY 1953 AND JANUARY 1959

Submitted by

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(E.S., Boston University, 1955)

In Partial Fulfillment of Requirements for
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<table>
<thead>
<tr>
<th>TABLE OF ABSTRACTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>EXPERIMENTAL</td>
<td></td>
</tr>
<tr>
<td>• Amsler, James T., &quot;The Identification and Measurement of Manipulative Skills of Children Six, Seven, Eight, and Nine Years of Age&quot;</td>
<td>1</td>
</tr>
<tr>
<td>• Barnes, Mildred J., &quot;A Pictorial Analysis of Softball Skills for Girls&quot;</td>
<td>4</td>
</tr>
<tr>
<td>• Black, Irving S., &quot;The Effect of Weight Training on Physical Fitness Index of High School Boys&quot;</td>
<td>6</td>
</tr>
<tr>
<td>• Coder, Alden Coy*, &quot;An Investigation of Relationships Between Certain Psychological Capacities and Motor Abilities of Athletes and Nonathletes on the High School Level&quot;</td>
<td>9</td>
</tr>
<tr>
<td>• Costes, Nicholas, &quot;A Study of an Olympic Champion's Training Program for the Mile or 1,500 Meters&quot;</td>
<td>12</td>
</tr>
<tr>
<td>• Davenport, Galena F., &quot;A Study of Galvanic Skin Responses in Junior High School Girls&quot;</td>
<td>14</td>
</tr>
<tr>
<td>• Delsanto, Frank, &quot;Reaction Time and Speed of Movement of Junior High School Students, Grades 8-9&quot;</td>
<td>16</td>
</tr>
<tr>
<td>• Dobbis, Robert, &quot;Football Starting Signals and Reaction Times of High School Football Players&quot;</td>
<td>18</td>
</tr>
<tr>
<td>• Edwards, Randolph E., &quot;Skinfold and Other Anthropometrical Measurements of Adolescent Boys&quot;</td>
<td>21</td>
</tr>
<tr>
<td>• Erickson, Carl D.*, &quot;A Study to Determine the Relationship Between Certain Psychological Capacities and Success in Coaching Football&quot;</td>
<td>24</td>
</tr>
<tr>
<td>• Fort, Moreland*, &quot;A Study of the Emotions of High School Football Players&quot;</td>
<td>26</td>
</tr>
<tr>
<td>• Garrity, Helen Marie*, &quot;The Relationship of the College Female Somatotype to Physical Fitness Performance&quot;</td>
<td>29</td>
</tr>
<tr>
<td>• Harmon, John Hillard, Jr., &quot;A Study of the Variability of the Galvanic Skin Response of a Selected Group of Eleven Year Old Children&quot;</td>
<td>34</td>
</tr>
</tbody>
</table>

* Doctorate Dissertation
King, William Howard Jr.*, "A Time and Motion Study of Competitive Backstroke Swimming Turns".................36


Massey, M. Dorothy*, "A Study of the Significance of Interpolated Time Interval on Motor Learning".................41

McKinney, E. Doris*, "The Relationships Between Certain Factors of Personality and Selected Components of Physical Fitness of College Freshman Women".............................44

Millan, Ann F.*, "The Relationship Between the Female Somatotype and Motor Capacity".............................47

Nagle, Francis J*, "The Effects of Two Systems of Weight Training on Circulo-respiratory Endurance and Related Physiological Factors"..................................................50

Oxendine, Joselph Bruce, "A Study of the Past Performances of Major League Baseball Batters and the Development of Predictive Indices for Future Performances"............................54

Oxendine, Joselph B.*, "A Study of the Significance of Varying Lengths of Practice Periods of the Growth of a Motor Skill".................................................................57

Pinto, Arnold L.*, "A Comparative Study of Roger's Physical Fitness Test and Harrow's Test of Physical Fitness for Seven and Eight Grade Boys".........................62

Provinzano, Frank Joselph, "A Comparison of the Physical Fitness of Athletes and Non-athletes".....................65


Simpson, Shirley Evelyn*, "To Develop and Validate an Objective Measure of Locomotor Response to Auditory Rhythmic Stimuli".........................................................70

Stewart, Lawrence James, "A Comparison of Three Basketball Skill Tests With Two Innate Capacity Tests"........73

Tiven, Paul J., "A Study Determining the Physical Fitness of Elementary School Pupils of Worcester Using the Kraus-Weber Tests"......................................................75

* Doctorate Dissertation
Vovos, Nicholas, "A Study to Determine the Emotional Effects of Basketball, Baseball, and Football on Certain Junior High School Athletes".......................... 77

Williams, Malcolm Movry, "A Comparison of the Initial Pressure of the Feet in the Start as the Sprinter Leaves the Blocks".......................... 79

SURVEY

Barrett, Walter E. Jr., "A Study of 100 Twelve Year Old Boys Who Dropped Out of Membership at the Cambridge, Massachusetts, Y.M.C.A.".......................... 80

Benson, Roy M., "A Census of Public School Systems in the United States in Order to Ascertain the Nomenclature Used and the Number of Supervisors in Physical Education as Compared to Music Supervisors".......................... 84

Bergstrom, Merrill Stanley, "Evaluative Criteria for Elementary School Physical Education".......................... 86

Blakely, Dorothy E., "Evaluative Criteria for Special Education for Physically Handicapped Children in Public Schools".......................... 88

Brayton, Margaret R.*, "The Problems, Worries, Fears, and Anxieties of Physically Handicapped Junior and Senior High School Adolescents".......................... 90

Mackey, Ann*, "A National Study of Women's Intramural Sports in Teachers Colleges and Schools of Education".......................... 93

Mackey, Helen T.*, "A Job Analysis of Women Supervisors of Physical Education in the Public Schools of the United States".......................... 96

McCarthy, Ruth R.*, "A Study of the Duties of Women Supervisors of Physical Education in the Public Schools of Massachusetts (High School level)". 99

Palmer, James J., "A Critical Evaluation by Teachers, of the Effects and Values of Little League Baseball, on Elementary School Boys While in a School Environment".......................... 102

Rice, Sidney W.*, "A Job Analysis of Selected Directors of College Physical Education".......................... 105

Doctorate Dissertation
Schifino, Anthony G., "A Follow-up Study of the Graduates in Health, Physical Education, and Recreation from the Boston University, School of Education from 1950-1953 Inclusively".................108

Smith, William C., "A Study of the Training Methods for Middle and Long Distance Running of Selected European, Australian, and American Coaches and Athletes"..........................113

HISTORICAL

Ellis, A. Claude, "A Pictorial Review of the Physical Education Program at Perkins School for the Blind"..........................116

Kalkasian, S. William, "The History and Development of the Eligibility Rules of the Pacific Coast Intercollegiate Athletic Conference".............117

Shepard, Dorothy Lawson, "Abstracts of Thesis Pertaining to Physical Education Submitted to Boston University Between January 1948 and January 1953".119

TEST CONSTRUCTION

Chadwick, Norman, "The Construction and Evaluation of an Instrument to Determine the Sports Knowledge of Boys from Grades Five Through Eight"..........................120

Forgues, George Walcott*, "The Construction and Validation of a Measure of Manipulative Abilities for the Middle Grades"..........................123

Hatch, Robert W., "The Development of a Method of Measuring, Comparing and Evaluating Baseball Hitter's Performances"..........................126

Hill, Frank Robert Jr., "The Development of a Battery of Tests to Determine the Level of Agility of Fourth, Fifth and Sixth Grade Children"..........................127


* Doctorate Dissertation
Turner, John Bruce, "Development of a Battery of Tests for Determining the Physical Fitness of Junior and Senior High School Boys"..................132

Vennochi, Julius J., "A Battery of Tests to Compare the Ability in Basketball of Selected Boys in a Junior High School and a Boy's Club"...........................134

Walsh, Richard J., "The Development of Physical Fitness and Predictive Test Norms for Sixth Grade Boys and an Item Analysis of the Test Events Used".................................137

Winkler, George, "A Study of the Reaction Time of High School Defensive Football Players"..................140

CURRICULUM CONSTRUCTION

Burke, Robert W., "Source Units in Wrestling and Boxing for Secondary Schools".................................142

Cummings, Martha Elizabeth, "An Officials Training Program for High School Girls in Field Hockey, Baseball and Softball".................................143

Hartigan, Thomas B., "Source Units in Golf, Tennis, and Badminton on the Secondary School Level"........145

Husker, Frank J., "The Mechanics of Tumbling for a Four, Six or Eight Year Program; Three Levels of Difficulty".................................146

Morris, Jeanne E., "Unit Organization of Two Topics in Water Safety Augmented by a Series of Two by Two Slides".................................147

Parker, Virginia E., "Source Units in Four Team Sports for Girls"........................................149

Thomas, Jeewaladam Pitchamuth, "The Development of a Proposed Program of Physical Education for the Public Schools of India Based on an Analysis of Indian Culture Relating to Physical Education and on the National Programs of Selected Countries"..151

Bibliography of Abstracts........................................154

* Doctorate Dissertation
INTRODUCTION

Within recent years, the number of unpublished master's theses and doctoral dissertations have multiplied as the demands for greater knowledge within the field of education has increased. At Boston University and other colleges and universities qualified graduate students have studied and prepared research materials for their own information and for the information and use of others.

In the vast field of education many complex areas of special interest have been investigated and studied. One of the specialized areas that has demanded much intense investigation and research has been the area of physical education.

As a result of this increased interest and study it has become necessary to make known and readily available the numerous theses and dissertations completed.

STATEMENT OF THE PROBLEM

The purpose of this study is to present in a complete and concise volume abstracts of dissertations and theses pertinent to physical education submitted to Boston University School of Education between January 1953 and January 1959.
PURPOSE AND JUSTIFICATION

As the demand for more adequate education within the field of physical education increases, the demand for knowledge and accessibility of available information also increases. It is for this purpose of meeting these growing demands that this complete and concise volume of abstracts has been written. The functions of this study are many: to provide a basic reference tool for all Boston University students who are concerned with the field of physical education; to provide a basic reference for all persons outside the university who are interested in physical education; to summarize the purposes, procedures, and limitations of completed studies; and to provide suggestions for further research in an effort to eliminate needless and time consuming searching.

This study is justified by the vast body of research studies that has been compiled at Boston University. As a basic reference tool this study will be a valuable contribution and will fulfill a definite need in the field of educational research. Its purpose is to make available in one comprehensive, yet, concise volume, all the graduate studies completed at Boston University School of Education between January 1953 and January 1959 pertinent to physical education.
SCOPE

This study encompasses sixty papers, eighteen doctoral dissertations and forty-two master's theses pertaining to physical education submitted to Boston University School of Education between January 1953 and January 1959.

For the purpose of this study the term physical education will be interpreted in its broadest sense. It was determined that this interpretation would provide for the most comprehensive and most valuable volume. Thus the papers reported will range from the manipulative skills of children to the effects of weight training on circulo-respiratory endurances, and from female somatotyping to proposed programs of physical education for India.

PROCEDURE

The three basic steps followed during this study were:

1. Investigation of completed graduate studies.
2. Abstraction of studies.
3. Classification of studies.

First, a complete and thorough investigation and perusal of the Boston University School of Education library was conducted with special emphasis on the main card catalogue and dissertation and thesis catalogues. Those papers pertinent to this study were located and obtained for further study.
Secondly, having obtained the studies, the dissertations and theses were abstracted and recorded as suggested in an outline by Dr. W.C. Kvaraceus, professor of education, Boston University.

Third, the studied abstracts were then evaluated and classified into four general areas, 1) experimental, 2) survey, 3) historical, 4) test construction.

Assembled, the study will have a table of abstracts in four general classifications listing the studies alphabetically by author's names of all reported studies. Doctoral dissertations will be designated by an asterisk (*) next to the author's names in the table of abstracts, the bibliography and the body of the text.
EXPERIMENTAL

Statement of the Problem:

The purpose of this study was to identify and measure the manipulative skills of early age children - boys six, seven, eight, and nine years of age. Also to be investigated was the relationship of these manipulative skills to such variables as gross motor development, measures of physical growth such as height and weight, and intelligence.

Scope and Limitations of the Study:

1. This study is concerned with male children of the elementary school grades.

2. It indicates a recognition of four variables which are of significance to child growth and development. The four significant variables investigated in a search for degrees of relationship are: (1) fine motor performance, (2) gross motor performance, (3) physical growth, (4) mental growth.

3. This evaluation of fine and gross motor performance involved the development, construction, and administration of preliminary test items as well as modification and final selection of items used.

4. The test items selected were administered to a group of two hundred boys of six, seven, eight and nine years of age. Increments of height, weight, age, and intelligence data were collected on these children.
5. The scope of the testing population was limited.
6. The complex scoring procedure offered some difficulties.

Procedure:

A study and analysis of children in grades one, two, three and four, as they performed their daily classwork was undertaken over a period of several months. The major concern in this observational study were the school activities which utilized those neuromuscular co-ordinations involving small segments of the body, i.e. The use of the fingers, hands, wrists, and arms; as a result of this observational study a list of the fine motor skill activities most commonly found in the elementary classroom was compiled.

From these observations an instrument was developed which would have test items based on the kinesiology of motion previously described as common to elementary school activities, yet capable of administration and scoring under standardized procedures.

After detailed evaluations for reliability and validity two hundred boys of the public schools of the city of Salem and the town of Swampscott, Massachusetts were selected for the administration of this instrument.

The data thus compiled was then statistically analyzed and recorded in this study.

Major Findings and Conclusions:

1. Reliability of this test was found to be very high, as determined by the test - retest method.
2. A significant difference in performance in favor of the older boys was noted in the measuring of gross motor skills.

3. A significant difference in performance in favor of the older boys was noted in the measuring of fine motor skills.

4. Correlation between fine motor performance and physical growth variables of height and weight indicated the relationship to be low and positive for all age groups.

5. Correlation between fine motor performance and intelligence was found to be low and positive.

6. Correlation between this test of fine motor performance and a measure of gross motor skill was found to be positive and low for all age groups tested.

Criticisms and Suggestions for Further Study:

1. Increasing the age range would provide more extensive information relative to the handwork abilities of elementary school children.

2. A study including elementary school girls would provide pertinent information relative to sex differences in fine motor skills.

3. Further study of fine motor performance with its implications for further school success.

4. A study of the relationship of fine motor performances and the placement of handwork activities in the school curriculum.

5. The use of this instrument as a predictive device in educational and vocational guidance seems to merit exploration.

*B.S. in Education, State Teachers College, Fitchburg, 1943
Ed. M., Harvard University, 1950
Statement of the Problem:

The problem in this research consists of a pictorial analysis of softball skills for girls.

Scope and Limitations of the Study:

The pictorial analysis is accomplished through the use of thirty-five millimeter kodakrome slides. The slides are taken of the Winchester High School girls varsity and junior varsity softball teams. Consultant advice is given by three instructors of women's physical education at Boston University.

Procedure:

In developing the problem, three steps were taken. First, a study of the literature, films, film strips, and an evaluation of the author's knowledge by professional consultants, to analyze the basic skills and skill drills of girls softball.

Second, in the construction of the slides there are:

1. A series of basic skills established
2. A series of team tactics and strategy established
3. A series of skill drill established.

Third, a jury of three people reviewed and evaluated the slides and made suggestions for improvements and corrections. The jury was comprised of three women's physical education instructors at Boston University Sargent Camp, all of whom have held national softball ratings.
Major Findings and Conclusions:

This study was undertaken to provide through the use of kodachrome slides a visual analysis of softball techniques for secondary schools and college instructors. Teachers, as well as students majoring in physical education may find the analysis helpful. They may also acquire a better understanding of methods and techniques of presentation through skill drills. The tests may indicate the perception of students viewing the slides. Students and others interested in softball may find the slides interesting and helpful.

Criticisms and Suggestions for Further Study:

1. Should the visual test prove of value, further study should be made in constructing a valid and reliable test.

2. Further study might also be made on increasing the number of skill drills, team tactics, and strategy.

*B.S., Boston University, Sargeant College, 1951.
Statement of the Problem:

The purpose of this study is to statistically determine the effect of Progressive Weight Training upon the Physical Fitness Index scores of high school boys, as compared to the effect of conventional type physical education class program on the P.F.I. scores of boys the same age.

Scope and Limitations of Study:

This experiment was conducted in a public high school. Subjects are tenth grade boys, none of whom had any previous weight training experiences. There were two groups used.

1. An experimental group of fifty boys who will participate in an organized Progressive Resistance Exercise Program, three periods per week, forty minutes per period for a period of seven months with school vacations excluded.

2. A controlled group of fifty boys who will participate in a regular class program of physical education excluding Progressive Resistance Exercise, for three periods per week, forty minutes per period for a period of seven months with school vacations excluded.

Procedure:

During the first month of the school year, September 1955, the entire tenth grade class of boys at New Britain Senior High School, New Britain, Connecticut were tested in the Physical Fit-
ness Index Battery of Tests as devised by Frederick Rand Rogers.

The testing part of the experiment was completed in a week's time. Each student reported to physical education class twice during this time. At the first session the following items were completed:

1. Weight
2. Height
3. Ages in years and months \(\left(\frac{\text{Wt.}}{\text{Ht.}} \times \text{Ht.} - 60\right)\)
4. Computation of multiplier \(\left(\frac{\text{Wt.}}{\text{Ht.}} \times \text{Ht.} - 60\right)\)
5. Left grip
6. Right grip
7. Back lift

The following items were completed at the second session:

1. Lung capacity
2. Leg lift
3. Push ups
4. Pull ups

The testing was done by three experienced testers all of whom were instructors at the school and by two training teachers from Springfield College. A group of leaders were organized to take care of:

1. Recording
2. Weighing and measuring
3. Looking up the norms on a chart

After the scores of the tests were completed, fifty boys were chosen at random to participate in a weight training program which was to take place in the gymnasium of the high school for the next seven months.

The rest of the tenth grade class went on with their regular class activities, two periods per week, forty minutes per period plus one intramural activity one afternoon a week for an hour. They received no weight training of any kind during the period of the experiment.
Major Findings and Conclusions:

In view of the data collected, there is a strong indication that weight training as outlined in this study increased Physical Fitness Index scores of the tenth grade students tested. The increase was significant at the 1% level of significance and an item analysis proved that the experimental group increased over the controlled group in every test item but one.

The only item where there was no significant difference was lung capacity. This test item is doubted by many measurement authorities to be a test of strength. It is evident by this study that weight training has little effect on this item.

The largest increase was in arm strength. This increase was conceivable because of the many exercises involving the arms.

After an analysis of the data it is concluded that Progressive Weight Training increases Physical Fitness Index scores in high school boys. This increase was 23.62% in favor of the experimental group.

Criticisms and Suggestions for Further Study:

1. The inability to control the outside school activities of either groups.
2. School vacations and holidays made scheduling difficult.
3. To find an optimal program of exercise.
4. The proper weight of increase in progressing.
5. Determine results with a large group.
6. Experiment for a longer period.
7. Control outside activities (The could be controlled at a resident school, e.g., military academy, boarding school)

*B.S. in Education, Boston University, 1952.
Statement of the Problem:

The purposes of this study were: first, to determine whether differences existed in certain psychological capacities and certain motor abilities between high school athletes and non-athletes; and second, to determine the degree of relationship between these psychological capacities and motor abilities of high school athletes and non-athletes.

Scope and Limitations of Study:

1. The psychological tests of depth perception, peripheral vision, reaction time, visual span of apprehension, and motor ability tests such as standing broad jump, sitting medicine ball throw squat twist, and leg raiser were administered to 1,447 high school athletes and 1,280 high school non-athletes attending public schools in the vicinity of Boston, Massachusetts.

2. The writer investigated whether differences existed in certain psychological capacities and certain motor abilities between athletes and non-athletes on the high school level.

3. Also determined were the degree of relationship between the psychological tests and the motor ability tests.

4. The subjects in this study were limited to the high schools in the vicinity of Boston, Massachusetts.

5. A limited number of psychological capacity tests and motor ability tests were used.
Procedure:

1. A battery of eight psychological capacity tests and a
   battery of four motor ability tests were administered to 124
   high school athletes and 128 non athletes.

2. The psychological capacity tests consisted of one
   depth perception test, three peripheral vision tests, three
   reaction time tests, and one span of apprehension test.

3. The Howard-Dolman depth perception apparatus was used
   to measure the depth perception.

4. The McClure Perimeter was used to measure peripheral
   vision.

5. The Stoelting Visual Reaction Timer was used to measure
   the speed of hand response to a light stimulus.

6. The Olsen method of measuring span of apprehension was
   used to measure the visual span of apprehension.

7. The four motor ability tests used in this study included
   the standing broad jump, sitting medicine ball throw, squat twist,
   and leg raiser.

8. Each subject spent one and one-half hours with the
   writer taking these tests.

9. The data obtained was analyzed as follows:
   a. The F. ratio technique was used to analyze the
      difference between the two study groups.
   b. The Pearson-Product-Moment method of correlation
      was used to determine the relationship between the
      psychological capacities and motor abilities of the
      two study groups.
Major Findings and Conclusions:

1. Highly significant differences were found between high school athletes and non athletes by the following psychological capacity tests: depth perception, peripheral vision, reaction time, and span of apprehension.

2. Highly significant differences were found between high school athletes and non athletes by the following motor ability tests: standing broad jump, sitting medicine ball throw, squat twist, and leg raiser.

3. A low degree of relationship exists between the psychological capacity test scores and the motor ability test scores.

4. The scores made by the high school athletes and non athletes on the psychological capacity tests do not indicate to any significant degree what their scores may be on the motor ability tests.

Criticalisms and Suggestions for Further Study:

1. The subjects in this study were limited to the high schools in the vicinity of Boston, Massachusetts.

2. A limited number of psychological capacity tests and motor ability tests were used.

3. Investigations similar to this one could be made in other geographic locations.

*A.B., Juniata College, 1932.
M. Ed., University of Pittsburgh, 1936.*
Statement of the Problem:

The purpose of this study was to produce data which contributed to the Olympic Champion's success in distance running.

Scope and Limitations of the Study:

1. Presented in this study is the training program of Joseph Barthel, Luxembourg, 1,500 meter champion, 1952 World Olympics.

2. At the time of this writing, Barthel is working on his master's degree in Sanitary Engineering at Harvard as an exchange student from Luxembourg.

Procedure:

The author was able to meet, talk and train with Barthel. For specific research into his background of training, the author received a personal dairy containing pertinent evidence of Barthel's progress as a runner. The entries of the diary, however are recorded in French, and some in Germany. Cooperating together, Barthel and the author translated the necessary data into English.

Major Findings and Conclusions:

1. An unbroken span of training over a period of years helps to adjust the body to progressively harder work.
2. Quantitative training increases endurance.
3. Qualitative training develops speed.
4. A long warm-up is recommended, particularly on cold days.
5. Time trials are a center of controversy as to whether or not they should be included in the workout.

Criticisms and Suggestions for Further Study:

1. A similar study on previous Olympic 1,500 meter winners, or any other such winners ranging from 800 meters to the 10,000 meters.
2. A Comparative study of training entirely for speed, and training entirely for endurance.
3. A study of the styles of middle distance runners and distance runners.

*B.S., State Teacher's College, Slippery Rock, Pennsylvania, 1950.*

**Statement of the Problem:**

The basic problem was to determine normal levels of galvanic skin responses of junior high school girls and to analyze the data in the light of I.Q. and age of each subject tested.

**Scope and Limitations of the Study:**

The text shows an accumulation of data derived from a study of the galvanic skin response readings of one-hundred and eighty-nine girls, aged twelve, thirteen and fourteen, in grades seven and eight at Winchester Junior High School, Winchester, Massachusetts.

**Procedure:**

1. The girls were tested at the beginning of the regular physical education class, twice a week for a period of five weeks during May and June 1954.

2. All the girls were standing when the readings were obtained with the instrument held by the author to insure steady pressure.

3. The subjects were instructed to wipe their fingers prior to placing them on the electrodes to insure more reliable readings.

4. The instrument used was the Harmon Psychogalvanometer calibrated in microamps.
Major Findings and Conclusions:

1. The study shows the galvanic skin response readings of twelve, thirteen and fourteen years old girls and the average of the first five and last five readings of the G.S.R., with the basic results of Median, Mean, Standard Deviation, and Standard Error of the Mean, Intelligence Quotient and correlations of I.Q. and G.S.R. recorded.

2. The author did not think there were sufficient subjects to justify a correlation study of the twelve year old subjects.

Criticisms and Suggestions for Further Study:

In view of the wide ranging controversy on the intangibles of emotion, reaction, behavior pattern or feeling the writer believes that all the factors involved in the galvanic skin response studies seem worthy of further experimental investigation.
Statement of the Problem:

A study of the innate capacity of reaction time and speed of movement in Junior High School boys in response to various auditory starting signal.

Scope and Limitations of Study:

1. Subjects for this study were ninety-six junior high school boys in grades eight and nine with ages ranging from fourteen and fifteen years.

2. The boys tested were selected from various physical education classes that normally meet one period per week.

3. The subjects were tested on separate days at various times during the regular school day.

4. The subjects tested ranged from boys with a high proficiency in motor skills to boys with a lesser degree of proficiency in the skills to those who have little ability in neuro-muscular movement.

5. Each boy was tested three times with each type of cadence.

Procedure:

Each boy was instructed to take the fundamental position of a sprinter. This position required him to place his power or kicking foot to the rear of the other foot with his heel in close proximity to the starting block, his hands held to the side, and his
eyes straight ahead. Each boy was tested three times with each of the cadence.

The number cadence 1, 2, 3, 4, was used as the rhythmic cadence.

The non-rhythmic cadence was tested with the one-two cadence where the subject was ordered to move on a certain one-two.

In the color cadence a group of four colors was used. The subject was instructed to dash forward when a certain color was mentioned.

Approximately halfway through the testing program nineteen boys were chosen at random from those already tested at least three times, to be retested in order to establish some reliability.

The reaction time and speed of movement of the subjects were tested with apparatus developed by Thompson and Nagle in their testing of varsity football players at Boston University.

Major Findings and Conclusions:

1. The rhythmic type of starting signal was superior in respect to reaction time and speed of movement.

2. The non-rhythmic starting signal was the second fastest.

3. The color starting signal was the slowest.

Critisms and Suggestions for Further Study:

1. Since very few studies of this nature have been made, a series of similar tests with certain modifications would be desirable.

2. Other possibilities would include the use of different types of starting signals.

3. Refinement in the testing apparatus would result in more accurate results.

*B.S., Boston University, 1954.*
Statement of the Problem:

A study of the innate capacity of reaction time and movement in response to various auditory football starting signals.

Scope and Limitations of Study:

1. Subjects for this study were two groups of varsity football lettermen from Hartford, Vermont and Lebanon, New Hampshire High Schools.

2. These schools of similar size, 120 to 170 boys in the ninth to twelfth grades, compete interscholastically in football.

3. A total of forty boys were used in conducting this study.

4. The subjects were tested on separate days at three o'clock, preceding the actual football practice session.

Procedure:

1. The testing was arranged to approximate actual offensive football conditions with as little emphasis as possible on the test aspect.

2. Two squads of football players were tested on different days at approximately the same time prior to the regular practice sessions.

3. All subjects were required to be thoroughly warmed up.

4. Subjects were tested individually after two preliminary trails on the apparatus.
5. Each boy was tested three times with each type of cadence.
6. The data collected was then statistically analyzed.
7. The reaction time of the subjects were tested with the apparatus developed by Thompson and Nagle at Boston University. The apparatus consisted of, a) contact switch, b) contact plate, c) relay, d) standard electric clock which recorded times in .01 of a second with D.C. current from a six volt battery.

Major Findings and Conclusions:

1. The rhythm type cadence offered a quicker reaction time and also a smaller standard deviation, which would indicate it as a superior cadence in respect to sheer quickness of reaction.

2. The re-test of the seven subjects offered a high correlation to the original test, thereby supporting its reliability, and the "T" indicated a high degree of significance of the test.

3. The non-rhythm signals were second fastest and the color signals the slowest.

Criticisms and Suggestions for Further Studies:

1. Further studies of this type using various other starting signals.

2. Modify the apparatus and place two clocks in the circuit:
   a. The first clock to record the strict reaction time from the starting signal to the start of the movement.
   b. The second clock to record the movement time interval of the subject's foot from the normal starting position to the contact plate.
It would then be possible to indicate whether the greater force is possible with a given starting signal.

3. With the present study it is not positive where the lapse of time is - in the reaction time or in the speed of movement.

*B.S., Boston University, 1953*
Statement of the Problem:

It is the purpose of this study to obtain certain skinfold and other anthropometrical measurements of adolescent boys ages 13 - 17, and to determine their importance to the medical examiner, health and physical educators, school nurses, and others interested in child growth and development.

Scope and Limitations of the Study:

1. Five hundred junior and senior high school male students were used in this study.

2. Their ages ranged from 13 to 17 with 100 subjects being measured at each level.

3. The schools were selected as representative of typical population groups in the Greater Boston, Massachusetts area.

4. The communities were Malden, South Boston, and Braintree, Massachusetts.

5. The author recognized the limitations of the small number of cases studied and the restricted geographical area involved in this study.

Procedure:

The measuring took place in the coaches' offices, weight training or vacant rooms in the various schools. The subjects were taken from the regularly scheduled physical education classes.
Several of them were called at a time in order to proceed as efficiently as possible. As they entered the room they were instructed to remove all clothing except shorts and socks. While they were doing this their name, age, year and month of Birth, ethnic background were recorded. All Measurements were recorded in the following order: height (inches); weight (pounds); chest, arm, back, abdomen, and calf (skinfolds in millimeters); girth (inches) of calf, arm and chest; and diameter (inches) of hips. All measurements were recorded on a devised form. Measurements of more than 5000 skinfolds and other anthropometric measures were compiled and statistically analyzed.

Major Findings and Conclusions:

1. Skinfold measurements are a quick and accurate method of estimating subcutaneous body fat.

2. The use of percentile norms is a determinative and practical method of comparing various adolescent growth.

3. The greatest height and weight growth occurs between the 13th and 15th year.

4. The abdominal skinfolds reveal the largest measurements.

5. Skinfolds increase in size from ages 13 through 15½ years, but diminishes in size after that.

6. Percentile data reveals that the 13 to 15 year interval as the greatest over-all growth period.

7. The intra-skinfolds (chest, arm, scapula, abdomen) have a high correlation with each other.

8. The Jewish subjects were heavier, taller, and had greater circumference and bi-iliac diameter than the Northern and Southern European subjects at ages 13 and 14 years.
9. The calf skinfold was the most difficult skinfold to measure accurately. This measure was so unsatisfactory that it was decided to exclude it from the data.

**Criticisms and Suggestions for Further Study:**

1. Similar research is needed on boys of younger age.
2. Similar research is needed on girls of all age levels.
3. The measurement and comparison of varied nationalities to determine the influence of ethnic background.

*B.S. in Education, Boston University, 1950
Ed. M. in Education, Boston University, 1951
Statement of the Problem:

This problem is an attempt to determine the relationship, if any, between certain psychological capacities, including reaction time, depth perception, span of apprehension, peripheral vision, and success in coaching football.

Scope and Limitations of the Study:

The reaction time, depth perception, visual span of apprehension, and peripheral vision were measured in the following groups.

1. Forty - four football coaches.

2. One hundred Boston University athletes (undergraduates) were tested in reaction time, depth perception and visual span of apprehension. Sixty - two Boston University athletes were tested in peripheral vision.

3. One hundred Boston University non-athletes (undergraduates) were tested in reaction time, depth perception and visual span of apprehension.

4. Ninety - nine students were tested at Purdue University in peripheral vision.

The writer has attempted to determine whether significant differences exists, in these psychological capacities and success in coaching football.
Procedure:

Forty-four head football coaches of either high school or college football were measured for reaction time, depth perception, span of apprehension, and peripheral vision. Raw scores from Olsen's study were used, measuring reaction time, depth perception, and span of apprehension for 100 Boston University athletes. Sixty-two Boston University athletes were tested by the writer for peripheral vision. Raw scores from Olsen's study were also used, measuring reaction time, depth perception, and span of apprehension for 100 non-athletes. Raw scores from Mc Clure's study were used, measuring peripheral vision of 99 students at Perdue University.

All of the coaches and students who participated this study did so voluntarily.

Major Findings and Conclusions:

No significant relationship was found between the psychological capacity tests administered and the percentage scores of football games won by the football coaches.

Criticisms and Suggestions for Further Study:

1. The writer feels that further investigation made with a randomly selected population may prove of value.

2. Further research in this area was indicated by the special observations listed in this study.

*S.S. in Ed., Boston University, 1942
Ed. M., Boston University, 1947

Statement of the Problem:

This dissertation attempts to evaluate the emotional status of high school football players in relation to their reactions on the playing field. The study explores the continuing emotional status of high school football players individually and by teams with the aim of better understanding the tremendous responses stemming from the competitive situation. Further, the study attempts to evaluate the level of activation through the media or varying emotional situations.

Scope and Limitations of the Study:

The galvanic skin resistance of the players of two high school football squads in Dayton, Ohio was systematically recorded during the football season of 1956.

1. A total of sixty-six players were included in this study.
2. There were three coaches from each school who cooperated in this study.
3. Case studies were made of twenty of the players through weekly organized interviews of players by the writer, coaches, and the parents.
4. The galvanic skin resistance of each player was taken just previous to each practice session during the entire season.
5. Galvanic skin resistance was recorded for each player in the locker room situation prior to each game.
6. Postgame galvanic skin resistance of each boy was read just before the boys showered.

7. A normal galvanic skin resistance norm was established for each boy, determined by a series of readings two weeks after the playing season was completed.

Procedure:

1. The galvanic skin resistance of each squad member of two football teams were recorded each day of the entire football season, except Sundays.

2. The galvanic skin resistance was determined by using a type of galvanometer known as a galvanic skin resistor.

3. The prepractice and pregame readings were carefully controlled as to the time and condition each day.

4. Case studies of twenty of the players were made in an attempt to discover any pertinent variables that influence to any extent the statistical findings in this study.

5. An organized subjective rating system was designed for coaches to rate the playing performance of a selected group of the boys after each game. These ratings are compared to individual ratings previously made by the coaches recording the expected playing performance of the boys.

6. The statistical tools used to analyze the tendencies of the team's galvanic skin responses were the mean, standard deviation, correlations, and level of confidence of the correlations, as well as, significant differences of normal, pregame, and pre-practice responses.
Major Findings and Conclusions:

1. Significant differences were found between the normal GSR and the prepractice series in twelve of the fifteen games in this study, with the higher measurements occurring in the prepractice situation.

2. Significant differences were found between the normal GSR and the pregame GSR in fourteen of the fifteen games, with the higher measurement occurring in the pregame situation.

3. Significant differences were found between the prepractice GSR and the pregame GSR in eleven of the fifteen games, with the higher measurements occurring in the pregame situation.

Criticisms and Suggestions for Further Study:

The three conclusions listed above are the most important findings of the study. The three results form a systematic and cohesive body of data on the basis of which it is logical to raise further research-oriented questions. For example, it would be possible to investigate the extent to which the same phenomena may exist in other behavioral activities both inside and outside of the ones socially accepted as "sport".
Statement of the Problem:

The major purposes of this study were first, to determine, group and compare the somatotype ratings of 200 college women; second, to determine the degree of physical fitness of the subjects in the study; and third, to compare the results of selected physical fitness tests with the female somatotype in a college physical education program.

Scope and Limitations of Study:

1. This investigation was conducted at the State Teachers College at Lowell, Massachusetts.

2. In investigating the problem several devices and tests were used, and administered personally by the writer. These included:
   a. A personal data sheet
   b. A photograph of each student in three views, (frontal, lateral and dorsal)
   c. A determined somatotype rating of each individual
   d. The grouping of related somatotypes into descriptive classifications.
   e. The Kraus-Weber Test of minimum physical fitness
   f. The United States Naval Reserve Physical Fitness Test for women
   g. The Scott Fitness Battery for measuring the physical fitness of women.
3. The statistical treatment of the data in this study includes:
   a. Conversion of scores on tests and battery of tests into normalized standard scores known as stanines.
   b. The determination of the various morphological components and a final assignment of a somatotype rating, using the Sheldon technique.
   c. The use of the Pearson Product - Moment Coefficient of Correlation to determine relationships between factors of physical fitness and somatotype classifications.
   d. The use of analysis of variance to compare the somatotype classifications on factors of age, height, weight, and performance in the physical fitness tests.

4. The subjects used were those taking the required physical education program with classes meeting twice a week.

5. A total of 218 students were photographed.

6. An age limit was set at 25 years.

7. The tests were selected in accordance with the ability of the group performing.

8. The constitutional classification of the subjects used in the study is limited to the technique originated by Dr. William H. Sheldon.

9. The photographic procedures and results were determined by the equipment, personnel and facilities available to the writer.

10. The classification of physiques into related groups is determined by the somatotypes available in the current study.

Procedure:

1. Each student was photographed in three views, (frontal, lateral, and dorsal) and the photographs were used to determine
the somatotype ratings for each individual, according to the three basic constitutional components, endomorphy, mesomorphy, and ectomorphy.

2. Examiner reliability to assess the somatotype ratings of college women was established by reliability coefficients obtained between the ratings of the writer and the ratings of a trained specialist at the Constitution Laboratory, College of Physicians and Surgeons, Columbia University.

3. Three series of Physical Fitness Tests were administered to each participant.
   a. The Kraus-Weber Test
   b. The Women's Reserve, United States Naval Reserve Physical Fitness Test
   c. The Scott Physical Fitness Test

4. The raw scores obtained were converted into normalized standard scores, stanines, in order to insure comparability and ease in interpretation.

5. Coefficients of correlation were used to determine the relationships between factors of physical fitness and somatotype classifications, batteries of tests of physical fitness and somatotype classifications, personal factors of age, height, and weight and performance of physical fitness tests.

6. Analysis of variance was used to compare somatotype groups on personal factors of age, height, weight and performance in the separate test items of the physical fitness tests.

Major Findings and Conclusions:

1. The means obtained for the morphological components,
endomorphy, mesomorphy, and ectomorphy compared closely with the most common college female somatotype previously determined in a nationwide study by Sheldon.

2. There was a noticeable trend that the groups high in the ectomorphic component scores consistently higher in both the United States Naval Reserve Test and the Scott Physical Fitness Test than the groups high in the endomorphic component.

3. The degree of difficulty between the performance of the United States Naval Reserve Test and the Scott Test was relatively slight. However, it appeared that the total group found the Naval Test more difficult to perform.

4. The strong endomorphic component appeared to be a limiting factor in the performance of physical fitness tests as compared to the strong ectomorphic component.

5. Structural variations among college women show a trend in differences of performance of physical fitness tests.

Criticisms and Suggestions for Further Study:

1. Investigations similar to this one may be conducted with a redistribution of somatotype groupings, using a coarser classification such as endomorphy, mesomorphy, and ectomorphy.

2. Similar studies may be conducted using sports skills in place of, or in addition to physical fitness tests as the basis of performance.

3. Investigations may contribute valuable data showing the relationship of the human physique to motor performance.

4. Controlled longitudinal research studies involving the
constitutional patterns and motor performance may contribute more significant findings.

5. Morphological classifications with limited numbers such as the Moderate Mesomorphs, as found in the present investigation, may be studied more extensively.

6. The use of constitutional photograph, as used in this study, may serve as a tool for appraisal and health guidance by the health educator and physical educators.

*B.S. Ed., State Teachers College, Lowell, 1944.
Ed. M., Boston University School of Education, 1946.

Statement of the Problem:

This is a study of the variability, if any, of the galvanic skin response of a selected group of twenty-five eleven-year-old children. The data has been considered in terms of sex, intelligence, and time of day.

Scope and Limitations of Study:

The subjects for this study were twenty-five students, both boys and girls, ages 11 years 0 months to 11 years 12 months as of the testing period.

Procedure:

1. The instrument used was a psychogalvanometer.
2. Before testing, the instrument was explained to the children. Preliminary measurements were taken so that each child knew that the instrument would not hurt him.
3. Readings were taken at prescribed times.
4. The intelligence quotient was based on the results of Kuhlmann-Anderson tests.

Major Findings and Conclusions:

1. With the conditions and subjects of this study, the means of the galvanic skin response readings increased from Monday to Wednesday to Friday.
2. The difference between the means of the male and female responses is significant under the conditions of this study.

3. The difference between the means of reading of children rated as having a high intelligence and those rated as having a low intelligence in this study is significant.

4. The mean of the final (second) reading of the morning or afternoon session is significantly higher than the mean of the first reading of the respective session in this study.

5. The efficiency of the Harmon-Johnson Psychogalvanometer would be improved by situating the electrodes so that they do not have to be held by the examiner.

**Criticisms and Suggestions for Further Study:**

1. The difference between the means of the male and female galvanic skin responses warrants further study.

2. The difference between the means of the galvanic skin responses of the high and low intelligence groups warrants further study.

3. The differences in means of readings taken at various times of the school day warrant further study of galvanic skin response when fatigue is the specific variable.

4. Future studies of the galvanic skin response of younger children are recommended.

*B.S., Boston University, 1949.*
Statement of the Problem:

This study has attempted to determine what type of competitive backstroke swimming turn is faster:

1. The method somersault turn followed by the two-arm glide. This is the method currently used by all known competitive backstroke swimmers.

2. The somersault turn followed by the one-arm glide. This is the experimental turn.

Scope and Limitations of the Study:

1. Subjects selected were limited to two groups of competitive swimmers:
   a. Fifty college and adult swimmers, age 18 and above.
   b. Fifty secondary school swimmers, age 17 and below.

2. Relatively few individuals have developed a fair degree of skill or interest in competitive backstroke swimming and turning.

3. Swimmers were tested in many different types of swimming pools.

4. The attitudes toward the experimental method of turning ranged from complete acceptance and use to severe criticism and indifference.
Procedure:

Swimmers were initially selected and tested on the standard somersault backstroke turn followed by the two-arm glide. Instructions were then given in the experimental method of performing the somersault backstroke turn followed by a one-arm glide. After at least ten days following the initial instructions, time and distance measurements were taken on the experimental one-arm glide method of training. This allowed for a sufficient period in which to practice the new turning method.

Using the manual method of timing, the time measurements were compiled. The data collected was then statistically analyzed.

Major Findings and Conclusions:

The author concludes that the faster and more effective method of performing a competitive backstroke swimming turn is the experimental motion saving method followed by the one-arm glide. These conclusions are not only based on time and distance data but also upon comparative motion analysis, utilizing underwater motion picture photography.

Criticisms and Suggestions for Further Study:

That similar motion saving concepts for competitive swimming turns, as originated in this study, be incorporated into the development of turns for use with the other competitive swimming strokes.

*B.A., Brown University, 1946.
Ed. M., Boston University, 1949.

Statement of the Problem:

The problem in this research was to study the galvanic skin resistance of boys and girls ages nine, ten and eleven years. More specifically, the problem was to make a study of the galvanic skin resistance scores of elementary school children as tested on the galvanic skin resistance meter directed toward assisting in the establishment of norms on the basis of sex and one year age brackets.

Scope and Limitations of the Study:

1. Boys and girls in grades four, five and six were tested on the skin resistance meter.

2. This testing included pre-tests for the range of scores, and the tendencies made in the score results by the time of day, as well as the testing of about 300 children for the actual statistical data.

Procedure:

1. A pre-test of one group each of fourth, fifth, and sixth grade children to establish the range of scores.

2. A pre-test of the children in one grade at three different times during the day.

3. Testing of a large number of boys and girls in grades four, five and six.
4. The results were recorded and statistically analyzed.

Major Findings and Conclusions:

1. There is a tendency for galvanic skin resistance to vary at different times in the day, scores tending to be lower later in the day.

2. There is a tendency for elementary boy's scores to be higher than girl's scores.

3. G.S.R. does not tend to vary considerably when treated in age brackets of one year; a tendency is noted for scores to be closer within grouped age ranges.

4. There is a tendency for mean scores to be higher than median scores.

5. Tendencies observed in comparison with other age levels are:
   a. That boys ages nine, ten and eleven tend to have higher scores than girls of the same age, high school boys and girls, and college men.
   b. That girls ages nine, ten and eleven tend to have lower scores than boys of the same age, and younger high school girls and boys, and college men.
   c. That scores tend to be high for children and decreases with increased age, but no definite conclusions can be made as to what ages the decrease tendencies occur for each sex.
Criticisms and Suggestions for Further Study:

1. Since the tests were all made during the first minutes of the gym period, the time of the day varied from room to room.

2. The classroom activity of the children and the "atmosphere" of the room prior to taking the test was uncontrollable factor which also varied from room to room.

3. In order to attempt to establish norms by age brackets and sex, more testing on all levels should be done.

4. A study of galvanic skin resistance of boys and girls of junior high school ages.

5. A similar study on galvanic skin resistance in an effort to find a method of establishing individual norms or reliable representative scores to be used in future research.

*B.A., University of Maine, 1946.*

Statement of the Problem:

This study was an exploration of the effect of three different interpolated time patterns on the learning of a motor skill. The instrument used in the study was a stabilimeter which was employed by Dr. George S. Shaddy in his extensive research. Two of the time patterns tested were of the type typically and currently used in education: three days a week (Monday, Wednesday, and Friday) and five days a week (Monday through Friday). The third group utilized an adaptation of the "Additive" pattern which Miller investigated. All three groups practiced five weeks although the actual number of practices for each group varied. The retention was checked for all subjects two weeks after the completion of their scheduled practices.

Scope and Limitations of Study:

The study was conducted in two convents within a twenty-five mile radius of Boston, Massachusetts. Both were convents of teaching orders of sisters of the same religious denomination. The subjects used in the study were novice nuns whose ages ranged from seventeen to twenty-one. One hundred and eighteen sisters participated in the study. The type of life, environment, educational program, diet, and the amount of rest were quite similar for all of the subjects appeared to be in an excellent state of health.
Procedure:

Three equated experimental groups, each of which followed a different time pattern over a period of five weeks, were scheduled as follows: Group X (MWF) by practicing Monday, Wednesday and Friday and Group Y (M-F) by practicing Monday through Friday were simulating time patterns commonly present in educational scheduling. Group Z (AA) followed an "adapted-additive" pattern and practiced on the following experimental days from the first: 1, 1, 2, 3, 5, 8, 13, 21, and 34. A retention check was given to each group two weeks after the final practice. Both inter- and intra-group performances were compared by the use of standard statistical measures including the critical ratio and differences were considered significant at the .05 level.

Major Findings and Conclusions:

The findings of this study do not indicate the superiority of any one of the time patterns that were investigated. At the last point where the performance of the three groups were compared on the basis of equal days of practice there where no statistically significant differences in the performance level of any one of the three groups.

Many interesting and significant characteristics of the three patterns became obvious in examining the data and have been presented in the text. It would appear that a choice of one of the examined patterns would depend upon the particular objectives of the program in which the practices were being scheduled.
Criticisms and Suggestions for Further Study:

1. A comparison of the performance of two equated groups who would learn a motor skill through the use of two separate time schedules of practice. The instrument used in this study could be the stabilimeter or a persuit rotor.

2. A learning study in which there were seven equated groups. The time patterns followed would be the four that Miller investigated in his study and the three that were explored in the present study. A retention test would be suggested three weeks after the final practice. A laboratory skill, such as the stabilimeter or persuit rotor, would be advisable.

3. A study similar to the present study regarding the instrument, the size of the group, and the choice of time patterns.

4. A comparison of the performance level of two equated groups after learning a team sport in which separate time schedules of practice were used.

5. A study in which the same time patterns and instruments were used as those utilized in the present study. The subjects involved would be college girls.

6. A study in which lower animals were the subjects and in which the same time patterns as those used in the present study would be employed.

7. A comparison of the performance levels of two equated groups who would be learning a skill such as typewriting. Interpolated practice schedules would be used.

*B.S. in Ed., Tufts College, 1943
Ed.M., Boston University, 1950
Statement of the Problem:

The major purposes of this study were, first, to compare certain factors of personality among groups of freshmen college women of a high, middle and low level of achievement in selected components of physical fitness; then, to determine the degree of relationship between selected components of physical fitness and certain factors of personality.

Scope and Limitations of the Study:

1. Three hundred and twelve women enrolled in the Freshman Classes at Bridgewater, Lowell and Salem State Teachers Colleges (Massachusetts) during the spring term of 1956 - 1957 formed the group participating in this investigation.

2. Represented within the group were both rural and urban students, assumed, because of their college status, to be of high average intelligence.

3. This study is limited, as are most measurement studies, by the instruments of measurement.

4. Further limitations may be found in the subjectivity of teacher's ratings, the failure of participants to complete the testing program, and the oversight of many factors that may play a part in the physical fitness and personality status of the individual.

Procedure:

Students enrolled in the freshman class of three state teachers college in Massachusetts were obtained to form the group for this
investigation. A battery of five physical fitness tests (Push-Ups, Sit-Ups, Jump and Reach, Chair Stepping and Shuttle Run), three standardized measures of personality (the Guilford-Zimmerman Temperament Survey, the Gordon Personal Profile, and the Gordon Personal Inventory), and a measure of socioeconomic status were administered to the group of 312 participants. Instructors rated personality traits of selected participants on a rating scale constructed by the writer.

In addition to these data, records of height, weight, body build, and menstrual cycle status were obtained.

Analysis of variance was used to compare groups in physical fitness and certain factors of personality, and groups in four categories of the menstrual cycle on selected components of physical fitness, and certain traits of personality.

Major Findings and Conclusions:

1. There are no significant differences among groups of a high, middle and low level of physical fitness in certain factors of personality measured by three standardized instruments.

2. There is no significant difference among groups of a high, and low level of physical fitness in traits of personality as rated by instructors.

3. There are no significant differences among groups in five areas of teacher training in total physical fitness, and in certain factors of personality.

4. There are no significant differences among groups in four categories of the menstrual cycle in total physical fitness and in certain factors of personality.
Critical Suggestions for Further Study:

1. Investigations similar to this one may be conducted in other locations.

2. Investigations similar to this one may be conducted using projective techniques to measure personality.

3. Investigation similar to this one utilizing men.

4. A controlled study of the effects of development in physical fitness on factors of personality.

5. Further study of possible orthogonal factors of physical fitness.

6. A controlled study of the relationships between physical fitness and menstrual function, and between personality and menstrual functions.

7. Further study for the identification of those traits of personality and physical fitness that may be considered favorable for the prospective teacher in various areas to possess maybe initiated.

*B. S., Boston University, Sargent College, 1943.
M.A., Boston University, Graduate School, 1945.
Statement of the Problem:

It is the purpose of this study to investigate the influence of the female physique on the inherent motor capacities of agility, power and motor educability.

Scope and Limitations of the Study:

1. A sample of 200 females were photographed in three views, somatotyped, and tested for agility, power, and motor educability.

2. The scores of each somatotype group were compared statistically with the scores of the total sample.

3. The study is limited, as are measurement studies in general, by the instruments of measurements.

4. Until there is more extensive evidence available on the distribution of female physiques, this sample may not be classified as random.

Procedure:

Two hundred females were photographed in three views, under standard procedures, and somatotyped by four judges. The subjects were then tested for agility, power and motor educability by means of the Burpee test of agility, the Sargent Jump test of power, and the Iowa Brace test of motor educability.
Eight somatotype groups were found. The test scores for each group were compared statistically with the test scores of the total sample.

**Major Findings and Conclusions:**

1. It is apparent that twenty-one percent of the female population (assuming randomness of sample), or roughly, one fifth, are endowed with the capacity to succeed in those activities demanding a high degree of motor educability, agility and power.

2. At the same time, it appears that nearly twenty-seven percent of the female population, or roughly, one fourth, are significantly limited in fundamental capacities.

3. The implications for women's physical education are several:
   a. Implications for the program of activities: a re-evaluation of self-testing, sports and dance activities to determine which demand high and which demand low degrees of motor educability, agility, and power.
   b. Implications for the scope of activities: a broadening of either the core or elective physical education program. This is variety for the sake of variability of talents, not variety for the sake of variety.
   c. Grading in physical education: insofar as physical education grade is based on motor skill achievement, some consideration for individual capacity might be allowed.
Criticisms and Suggestions for Further Study:

1. Further investigations of the female somatotype might be undertaken in the area of sports skills, especially those sports skills which comprise a large part of the woman's physical education program.

2. Such skills which involve eye-hand coordination as well as fundamental motor capacities might be investigated.

3. Because more females than males fall into the ectomorphic category it might be well to investigate this problem.

*B.S., Boston University, Sargent College, 1946
M.A., Mills College, 1947
Statement of the Problem:

The major problem with which the author is concerned is to determine the effects of weight training on circulo-respiratory endurance and on some physiological factors which are indicative of circulo-respiratory efficiency, upon which circulo-respiratory endurance depends.

A second aspect of the problem arises in the writer's use of two different systems of weight training in this study. The purpose of this aspect of the problem is to determine whether a low repetition-high resistance weight training system is inferior or superior to a high repetition-low resistance weight training system in terms of its effects upon circulo-respiratory endurance.

Scope and Limitation of Study:

1. This study was conducted with sixty male freshman, all of whom were eighteen to nineteen years of age.

2. Although all subjects agreed to abide by explicit personal conduct rules during the study, it was not possible to directly supervise the living practices of the subjects.

Procedure:

The experiment was conducted at the University of Florida during the spring semester of 1957-1958. Sixty freshman student volunteers were used and three groups of twenty students each were
equated on the basis of their performance time in a 300-yard run and their body size.

All three groups were subjected to a series of initial tests involving circulo-respiratory endurance and the measurement of various circulo-respiratory responses. These determinations were made with the subject at rest, during a bout of moderate exercise. All testing was done while the subjects were in a post absorptive state between 6:00 A.M. and 9:00 A.M. A bicycle ergometer was used in making all exercise determinations. Moderate exercise determinations were made while the subjects performed 4275 ft. lbs. of work per minute.

Following two and one half weeks of testing an eight week training period was begun. During this time one experimental group participated in a weight training program in which a system of low repetition-high resistance exercise was used (2 sets-5 repetitions maximum). The other experimental group participated in a weight training program in which a system of high repetition-low resistance exercise was performed (2 sets-15 and 12 repetitions maximum). The other group participated in a minimum physical activity course in bait casting or archery. All groups met three times per week for one hour of training.

The eight week training program was followed by a two and one-half week testing program. In this program the subjects submitted to the same series of tests conducted during the initial testing period. Results of the initial and final test within each group, and the final test results between groups were then compared statistically.
Major Findings and Conclusions:

1. Weight training does not have an adverse effect on circulo-respiratory responses measured at rest and during moderate exercise.

2. Weight training improves the response of an important circulatory factor measured during all-out exercise. The improved response is manifested in a delayed rise of the heart rate during all-out exercise. Since the heart rate response was used as the measure of circulo-respiratory endurance in this experiment, it follows that weight training increases circulo-respiratory endurance.

3. Neither system of weight training used in the study appears to be superior to the other in implementing improved circulo-respiratory responses or improved circulo-respiratory endurance.

4. On the basis of resting and moderate exercise circulo-respiratory response measurements, weight training does not appear to be significantly superior to participation in bait casting or archery in improving responses. There is an indication that weight training is superior to bait casting and archery in improving circulo-respiratory endurance as measured during all-out exercise.

Criticisms and Suggestions for Further Study:

Further research on this problem should be concerned with a detailed study of the responses of the various circulo-respiratory mechanisms during all-out exercise in initial and final tests, and time limitations made this step impossible in this study. All of the physiological factors measured by the writer at rest and during
moderate exercise could be made during a bout of all-out exercise, keeping the exercise time constant. This, of course, would improve the measuring of post exercise responses. A study of this type would undoubtedly throw additional light on the problem.

*B.S. University of Nebraska, 1951.
M.A. University of Nebraska, 1953.
Statement of the Problem:

This study is being conducted in an attempt to find a way of predicting future batting performance of baseball batters by their batting performance over the first six years. Trends or characteristics of moderate and very successful performers will be studied to determine what correlation, if any, can be found between early and later trends in batting. The development of predictive indices will be undertaken.

Scope and Limitations of Study:

1. This study will include all major-league batters who have entered the major league since 1900, and have played for at least six seasons.

2. The players will be separated into past and present-day groups. The term past players means those who no longer play in the major league. The term present-day players mean those players still playing in the major leagues.

3. Graphs will be constructed showing the rise, peak, and decline of each time-group, present and past. If there are significant correlations or trends among these groups, predictions may be considered reliable.

4. Various changes in playing conditions such as rules, type of balls, night baseball and war will not be given special considerations in this study for only the trends of the batting
averages are of primary importance.

5. Performance or batting skill is determined solely by yearly batting averages.

Procedure:

Yearly batting averages for each player were obtained from the references and tabulated. There were 382 past players and 77 present-day players included in this study. Both groups were then catalogued into different time groups, according to their respective number of seasons of play. This study was concerned with the trends made in the first six years. The mean scores for each time-group were put into tables, then into graphs. Some predictions are made as to the future performance of some present-day batters. These predictions are made on the basis of the findings of this study.

Major Findings and Conclusions:

1. This study indicates that trends made in the first six years have definite influence upon a player's future performance and his length of play in the major league.

2. Short-term players, six-to-ten-years players, usually reach a peak in the first half of their career.

3. The very long-term players, over seventeen years, reach a batting average peak late in their careers or after the midway point.

4. Players in the twelve-to-sixteen-year range reach a batting average peak about midway in their career.
5. It was found that any time a group batting average returned as low as the first seasons batting average, they never played more than one more season.

6. Contrary to the "Sophomore Jinx" it was found that there is more average improvement in all batting averages during the second season than at any other time during a player's career.

7. One's age does not play as great a part in the length of one's baseball life or his performance as most people suspect. Height and trend of batting averages seems more important in one's length of play than does his age.

Criticisms and Suggestions for Further Study:

1. A study could be made of weekly batting averages throughout a season in an effort to determine (1) at what part of the season most batters perform best, (2) optimum length of spring training.

2. A study might be made of past major-league baseball player records to determine the age at which a player should begin playing professional baseball for best success.

3. A study could be made to determine the effect of little-league baseball play on a player's future success in baseball.

*A.B., Catawba College, 1952.*

**Statement of the Problem:**
The purpose of this study was to determine the effect various lengths of practice periods have on the growth of a motor skill.

**Scope and Limitation of Study:**
The study included seventh and eighth grade boys of East Junior High School and West Junior High School in Watertown, Massachusetts. Out of the 168 subjects who began the experiment, 135 completed all practices and are included in the results. Of this number there were 47 boys in one experimental group and 44 boys in each of the other two groups. Each boy had a total of ten practice days over a five week period, in addition to an equating test prior to the beginning of practice and a retention check nineteen days after the final practice. Subjects were selected at random from class rolls which included more than 400 boys.

The study was designed for a nine week experimental period, including the equating and retention tests. Analysis of the data reveals that none of the groups reached a plateau. Each group continued to improve with each practice. Significant findings may have been made if practices had continued until all groups reached a peak. A 12 or 16 week experimental period may have shown somewhat different trends, as the learning curves flattened out.
Procedure:

One hundred and sixty-eight junior high school boys took part in this study. The apparatus used was the stabilimeter. Three experimental groups practiced on different time schedules. Interpolated periods between practices were held constant for all groups. Each group practiced two days per week for five weeks. All groups were on spaced practice schedules.

The only variation in practice for the three groups was the length of the practice period. Group I practiced a total of 20 circuits, Group II practiced 50 circuits, and Group III practiced 80 circuits.

The groups were equated during the week prior to the beginning or regular practices. Three weeks after the final practice period, a five circuit test was given to all subjects, to determine the retention level of the three groups.

The groups were compared by statistical analysis at the beginning of practices, and at the various phases throughout the experiment. Differences among group performances were considered significant at the five per cent level of confidence. Coefficients of correlation were computed between general intelligence scores and performance at each practice period.

Major Findings and Conclusions:

1. In overall performance throughout the experiment, Group III (80 circuit group) did significantly better than either of the other two groups. Group II (50 circuit group) performed significantly better than Group I (20 circuit group)
2. Group III improved more rapidly and attained a higher level of efficiency than Group II. Group II, in turn improved faster and attained a higher level than did Group I.

3. During practice periods three and four, the performance level of the three groups remained in the same relative order as stated above.

4. All groups improved consistently from practice to practice throughout the experiment. None of the groups reached a plateau.

5. At the retention check, all groups performed significantly better than they did at the last regular practice.

6. All groups generally showed gains from circuit to circuit throughout the practice day. Groups with relatively long practice periods, however, dropped down between practice periods.

7. There was a positive correlation between general intelligence scores and performances in the mirror tracing skill throughout the experiment. In most instances this correlation was low.

8. Intercorrelation among equating day performances (mean, median and best circuit score) were high.

9. Intercorrelation among all regular practice scores for each subject were high.

10. All groups were approximately equal after twenty circuits of practice, regardless of the time during the experimental period at which this occurred.

11. For maximum learning efficiency in the mirror tracing skill, relatively long practice periods are desirable during the early stages of the learning process.
12. After considerable skill has been developed, efficiency exhibited late in the practice period is not reliable. The high level of efficiency attained in the late stages of the practice period was not carried over to the next practice.

13. As a predictive index for future performance in the mirror tracing skill, the mean performance of the second practice appears to be best.

Criticisms and Suggestions for Further Study:

1. Additional research is recommended with the skill of mirror tracing, in which the length of the practice period for groups might vary during the experiment. Groups could use progressively increasing or decreasing work periods.

2. Combining variations in the spacing of practice periods with variations in the length of practice.

3. Use of regular physical education skill which is entirely new to all subjects in the experiment.

4. Combine the learning of a laboratory type motor skill with the learning of a regular physical education skill.

5. Use academic material such as memorization of poetry, nonsense syllables, foreign language vocabulary, or spelling new words.

6. Combine the learning of a laboratory type motor skill with the learning of academic material.

7. Experiment with subjects who have a degree of skill in a regular sports skill.

8. Use such manual skills as typing, piano, carving, or drawing.
9. Either of the above experiments with subjects of different ages.

10. Lower animals should be used in research in which variations in the length of practice periods are made.

11. Place major emphasis on the best performance score rather than the mean score.

*B.S., Catawba College, 1952.
Ed. M., Boston University, 1953.

Statement of the Problem:

This study is a comparative study of two physical fitness tests, the Harmon Tests and the Roger's Tests.

Scope and Limitations of Study:

1. Ninety-six boys of the 7th and 8th grades in the Roosevelt School, Melrose, Massachusetts were the subjects in this problem.

2. The ninety-six subjects were given both batteries of tests; Harmon Test and Rogers Test, consisting of the following exercises:

Roger's Physical Fitness Test

   a. Right and Left Hand Grip Strength Test
   b. Back Lift Test
   c. Leg Lift Test
   d. Push-up Test (Dips)
   e. Pull-up Test
   f. Lung Capacity Test

Harmon's Physical Fitness Test

   a. Modified push-up
   b. Sit-up
   c. Chalk Jump
   d. Standing Broad Jump
   e. Colorado Twist Test
   f. Obstacle Run
Procedure:

The ninety-six subjects were given both batteries of test. The test results were tabulated and assigned T-Score values. The T-Score values for each test were combined for a grand total. This total score value was used as a basis of comparison with the Roger's Physical Fitness Index.

Correlations were made between the test results of the two batteries. Individual tests of the two batteries were compared. The range, mean and standard deviations were computed for each test item of the Harmon Test.

Major Findings and Conclusions:

1. The Roger's Test will test strength of the students. The test, however, requires trained personnel, expensive equipment, and is time consuming.

2. The Harmon Test will test arm and shoulder strength, abdominal strength, leg strength, agility, co-ordination and speed. The test requires very little equipment; practically no special training to administer and is readily administered to large groups.

3. The Roger's Test is a proven and reliable test of the strength of individuals. The Harmon Test is in the experimental stage.

Criticisms and Suggestions for Further Study:

1. The limitations involved were the relatively small numbers of subjects tested (96), and the age of the subjects (11-15½).
2. In future studies the subjects tested should be high school boys. This age group should provide a homogeneous group.

3. Future studies should also be made with boys in grades seven and eight to verify or dispute the findings of this study.

*B.S. in Physical Education, University of Massachusetts, 1951.*
Statement of the Problem:

The problem selected for this research is stated as:

A comparison of the physical fitness of athletes and non-athletes.

Scope and Limitations the Study:

1. The difference between athletes and non-athletes is based upon participation or non-participation in athletics at the Ayer High School.

2. Athletes are considered as those students who are squad members of at least one varsity athletic team during the school year.

3. The non-athletes did not participate in athletics but were registered only in the required physical education classes.

4. A total of fifty-five (55) athletes and fifty-eight (58) non-athletes, or one hundred and thirteen (113) boys in the entire enrollment of the Ayer High School participated in this study.

Procedure:

1. Carefully prepared standardized instructions were given each testee.

2. Before testing, the tester conducted warm-up calisthenic drills for approximately two minutes.
3. The tester permitted sufficient number of practice drills for each event to insure the boy's understanding of the proper techniques of execution.

4. The writer conducted, judged, and scored the test for each participant.

5. The results of the battery of test including, sit ups, push ups, burpee tests, chalk jumps and standing broad jumps were recorded on a score card.

Major Findings and Conclusions:

1. Athletes exceed non-athletes in physical fitness.

2. Participation in athletics does more to maintain physical fitness than just taking part in the required physical education program.

Criticisms and Suggestions for Further Study:

1. What would the results of the investigation show if another school year were devoted to a similar study with the athletes of this research classified as non-athletes and the non-athletes of this research classified as non-athletes and the non-athletes classified as athletes?

2. Because the non-athletes were superior to the athletes in the chalk jump event, could the results be based upon the fact that the athletes were heavier and shorter than the non-athletes?

3. Would the results be so favorable for the athletes if a larger number of participants were investigated?

*Bachelor of Science in Education, Boston University, 1942.*
Statement of the Problem:

An attempt will be made to find a way of predicting future pitching performance over the first four years. Trends or characteristics of moderate and very successful performers will be studied to determine what correlation exists in the trends of pitchers. The development of predictive indices will be undertaken.

Scope and Limitations of the Study:

1. This study will include all Major League pitchers who have entered the Major Leagues since 1900, and have played at least four seasons. The criteria for a full season will be at least twenty games played in the Major Leagues as a pitcher.

   2. It is felt by the writer that various changes, such as rules, type of ball, and night baseball, do not have a great effect on performance and, therefore, are not given consideration in this study.

Procedure:

The total number of wins plus the percent totals for each group were gathered. These totals were then divided by the number in each group. Each group was then placed on a chart to show each trend. In all, 488 players were involved in this study.
Only the first four years or seasons were used in arriving at a trend for the four to six year group. This procedure followed in all the other groups.

Predictions will be made of future performances of some present-day pitchers. These predictions are made on the basis or findings in this study.

Major Findings and Conclusions:

1. Trends made in the first four years had a definite bearing upon a player's future performance and his length of play in the major leagues.

2. In every case, with the exception of one, a general rule held; once a player had a lower win total or percentage mark below his first season his career was at an end.

3. This study disapproved the "Sophomore Jinx" theory, that most ball players do not play as well in their second year as they did in their first year.

4. It was found that the age of the pitcher does not play as great a part in the length of the player's baseball life as people believe.

Criticisms and Suggestions for Further Study:

1. A study of innate capacities of major league baseball players with the aid of scientific devices. The test could include; test of reaction time, peripheral vision, depth perception, and other scientific measures now available.
2. A study of the relationship of earned run averages and the number of games won during a season.

3. A study and predictive measure for determining the winning team in each of the major leagues, using an objective measuring stick.

*B.S., Boston University, 1953.
Statement of the Problem:

The purpose of the study was to develop an instrument to measure objectively locomotor response to auditory rhythmic stimuli in individuals from control and experimental groups. This measure was to be compared with sensory tests which involved a written response.

Scope and Limitations of the Study:

1. The study groups were composed of 89 women from the general college population (control group); 42 dance club members from major programs of physical education, and 38 professional dancers (experimental group).

2. Sex differences were not investigated.

3. Norms were not established.

4. The size of the population samples were comparatively small.

5. Comparisons between locomotor response and motor response were not made.

6. Whether or not the dancers also have high athletic skill was not measured.

7. A comparison of practice and non-practice effects on performance was not made.
Procedure:

The study will include first, a search of current literature on the subject of the measurement of rhythm as well as on the place of rhythm in dance. Secondly, it will require the development of a measure, including a technique for its use, of locomotor response. The third step will involve administering the locomotor response measure to individuals within control and experimental groups. The groups will include members of the general college population (control group), and trained amateur and professional dancers (experimental groups). The sensory test will require a written response. The final step will be concerned with the statistical analysis of the test results. The analysis will involve comparisons among the three groups, of their scores on the experimental instrument and the results of the sensory rhythm discrimination tests administered to the groups. The instrument used to measure locomotor response is the rhythmeter.

Major Findings and Conclusions:

1. An instrument to measure objectively differences in locomotor response to auditory rhythmic stimuli has been developed, and found to be reliable.

2. Within the experimental group no significant differences were found on the instrument to measure locomotor response (rhythmeter).

3. Control and experimental groups of women indicate that individual and group differences exist in locomotor response to auditory rhythmic stimuli, to a statistically significant degree.
4. No statistical evidence was found to indicate significant differences in control and experimental groups for the Kwalwasseer-Dykema Music Tests.

5. Results of this study indicate that performance on the instrument to measure locomotor response to auditory stimuli may serve as an indication of rhythmic ability, which is a basic need in the field of the dance.

Criticisms and Suggestions for Further Study:

1. The establishment of norms for the measurement of locomotor response to auditory rhythmic stimuli.

2. A comparison study of differences in results among males and females.

3. A comparison of scores made on the instrument to measure locomotor response to auditory stimuli with athletic skill.

4. A study of locomotor response to other stimuli, such as light or touch.

5. A comparison of the response to auditory rhythmic stimuli by locomotor activity (rhythmeter) and by motor (hand) reaction.

6. A study of group results on the instrument to measure locomotor response (rhythmeter) with an experimental group to experience concentrated practice in rhythms and dance.

7. A growth study over an extended span of time to determine the relationship of scores of individuals at one age, and the same subjects' scores when older.

*B.S. in Ed., Tufts College, 1943
Ed.M., Boston University, 1949

Statement of the Problem:
A comparative study of two innate capacities, reaction time and depth perception, with ability to play basketball as measured by specific basketball skills tests.

Scope and Limitations of Study:
1. Twenty-eight male high school basketball candidates from Dover-Foxcroft, Maine were the subjects for this study.
2. The tests used in this study were:
   a. Knox Basketball Test
   b. Johnson Basketball Test
   c. Basic Basketball Shot Test
   d. Allgaier Upright Foot Reaction Test

Procedure:
The individual tests were given and the results tabulated, analyzed and interpreted.

Major Findings and Conclusions:
The writer concludes that basketball ability tests merely serve the purpose of separating the players of greatest potential ability from those with little or no ability. They can be most effectively used with large groups of candidates.
Criticisms and Suggestions for Further Studies:

1. The devising of a test which would more accurately measure the emotional reactions and their effect on the playing ability of players. The ability to think clearly when under severe pressure is the most crucial test of a good athlete.

2. The devising of a test which would denote a player's competitive aptitude.

*B. A., University of New Hampshire, 1940*

Statement of the Problem:

This study is being conducted to determine if the physical education program that is being offered in the Worcester Public Elementary Schools is meeting the needs of the pupils in terms of the Kraus-Weber tests of muscular fitness.

Scope and Limitations of the Study:

1. The Kraus-Weber Tests were given to 12,153 school children representing the entire group in grades three through six in all the public schools.

2. The only children omitted were those who had just returned to school following a serious illness or those who were absent at the time of the tests.

3. The ages of the groups ranged from six through twelve and included both boys and girls.

Procedure:

The members of the Elementary School Physical Education Staff in the Worcester Public School System composed the group which administered all the Kraus-Weber Tests. One member of the team had been certified by Dr. Kraus in the administration of the tests. The certified member was responsible for supervising and instructing the others in the proper testing procedures. A pre-testing clinic was held with the group for this purpose.
In many schools a special testing room had to be assigned with tables on which to conduct the tests. In other schools the teams could move from room to room and double desks or tables carried along for use in making the tests.

**Major Findings and Conclusions:**

1. The suburban group was found to be superior to the urban group in all failure comparisons.

2. The greatest number of flexibility failures and test failures occurred between the ages of eight and ten years.

3. Weakness failures reached their height at age six and then dropped steadily to almost zero at age fourteen.

4. After age ten failures show a steady downward trend in all tests.

5. As children increased in age the number of multiple failures decreased.

Statement of the Problem:

The purpose of this study is to determine the emotional effects of basketball, baseball, and football as measured by the skin resistance galvanometer on certain junior high school athletes.

Scope and Limitations of Study:

1. Three groups of boys, eleven in each group, who participated in football, baseball and basketball were chosen to participate in this study.

2. The boys are members of the junior high school teams at the Memorial School of Salisbury, Massachusetts.

3. The ages of the boys range from thirteen years, three months to fifteen years, five months.

4. The microammeter was the instrument used to collect the data.

5. The boys' readings were taken at 8:45 A.M. and at 12:15 P.M. to set a median normal score.

Procedure:

The boys were divided into three groups. Group I, baseball, participated in eight baseball games. Group II, football, participated in six football games. Group III, basketball, participated in seven basketball games.
All the members of the three groups were tested for twenty days to set the mean and median scores for "normal conditions."

To establish the pre-game and post-game mean and median scores the groups were tested prior to the warm-up exercises, approximately fifteen to twenty minutes before the games, and were tested again immediately after the games.

The three groups were shown the galvanometer and its value, use, and operation was explained. The readings were recorded by the team managers of the different sports, while the writer administered the tests.

**Major Findings and Conclusions:**

1. Basketball registered the highest G.S.R. scores.
2. Baseball registered the lowest G.S.R. scores.
3. Football registered between basketball and baseball.
4. More emotional feeling was recorded after practice and after game situations than before practice and before game situations.
5. The G.S.R. responses of all the groups varied before each practice in game situations
   a. All groups showed an increase in the G.S.R. median after practice except in baseball.
   b. All groups showed an increase in the G.S.R. median after games except football.

**Criticisms and Suggestions for Further Studies:**

A similar study could be conducted at a higher level and a comparison could be made between the two groups.

*B.S., Boston University, 1954.*
Statement of the Problem:

This study is concerned with the initial action of the sprinter's feet as he leaves the starting blocks in four different types of starts or spreads used in sprint races.

Scope and Limitations of Study:

1. One hundred men of different heights, weights, and abilities were selected from the freshman physical education classes and the freshman and varsity track squads at the University of Rhode Island for these tests.

2. They were tested in the physical education classes throughout the week beginning Monday, December 8 to Friday, December 12, 1952.

3. The 94 men selected from the physical education classes were not coached in these starts previous to the tests.

4. The other six men were members of the varsity track squads and had previous coaching on the spread start used at the University.

Procedure:

After preliminary warm-up and stretching exercises by the group, they were individually tested on the four spreads, in the following order:
1. Long spread
2. Intermediate spread
3. University of Rhode Island spread
4. Bunch spread

Each member of the group was allowed one practice start on each of the different spreads. As each man left the blocks, the initial action of the lights was noted on each spread and recorded. They were instructed to sprint thirty yards to insure race conditions.

Major Findings and Conclusions:

1. In the first three spreads the initial push is from the rear foot.

2. In the fourth spread, the bunch start, the initial push is still from the rear foot, but at a lesser percentage as compared to the other three spreads.

3. Of the one hundred young men tested, the results of the tests on the four spreads indicates that the initial push of the sprinter's feet as he leaves the starting blocks is from the rear foot 95.8% of the time.

Criticisms and Suggestions for Further Study:

1. A comparative study could be made of the tension of the sprinter's body in the "get-set" position, and as the sprinter leaves the blocks in the four different spreads used in this study.

2. A comparative study could be made of the gradual lifting of the sprinter's body when he leaves the blocks and goes into his stride from the same four spreads.

*B.S., Boston University, 1951.
SURVEY

Statement of the Problem:

The purpose of this study was to find out why boys approximately twelve years of age discontinued membership at the Cambridge Y.M.C.A., Cambridge, Massachusetts; and to ascertain their opinions regarding certain aspects of the Cambridge Y.M.C.A.

Scope and Limitations of the Study:

1. This study is concerned with 100 boys who dropped out of membership at the Cambridge Y.M.C.A., during the period from October, 1950 to September, 1952.

2. The study included only those boys who were between eleven and one half and thirteen years old at the time they dropped Y.M.C.A. membership.

Procedure:

An interview form was constructed which would enable the writer to gather the necessary data and tabulate it as easily as possible. A list of boys who were between eleven and one half and thirteen at the time their Y.M.C.A. memberships expired was compiled. The boys chosen for interview were the one hundred who happened to be at home when the writer called. The results were then tabulated and recorded.
Major Findings and Conclusions:

1. The dropout of friends accounted for 26.8 percent of the reasons given for discontinuing Y.M.C.A. membership.

2. Dissatisfaction with the program accounted for 11.3 percent of the reasons given for dropouts. This category included complaints of time limitations, lack of program variety, lack of opportunity for use of boxing and weight training equipment.

3. Distance from home to the Y.M.C.A. was stated by 11.3 percent of the boys interviewed. Distance may be the reason for a small percentage of dropouts, but it is not a major factor. Only eight percent of the group lived more than a mile and three quarters from the Y.M.C.A.

4. Other interests accounted for 9.8 percent of the dropouts. These reasons centered around membership in other organizations, school teams, and a few specialized interests. No evidence appeared to support any theory of intense competition from any single source.

5. Financial difficulty was mentioned in 7.8 percent of the reasons for dropouts.

6. A desire to get out-of-doors more often accounted for 6.3 percent of the reasons.

7. Unpleasant relationship accounted for 4.9 percent of the reasons given for dropouts. These reasons concerned fighting, and petty theft among the boys themselves.

8. Health concerns constituted 4.2 percent of the reasons.

9. Part-time jobs accounted for 3.5 percent of the reasons.

10. School homework, fear of the water, and unclassified
reasons were some of the other infrequent reasons given for dropouts.

Criticisms and Suggestions for Further Study:

1. What effect does the Y.M.C.A. experience of dropouts have on younger brothers?

2. What types of organizations do boys tend to join after dropping Y.M.C.A. membership?

3. What are the real opinions of adolescent boys regarding the policy of nude swimming at the Y.M.C.A.? Why?

4. What are the real opinions of parents regarding the policy of nude swimming at the Y.M.C.A.? Why?

5. What are the current methods of follow-up of dropouts from the membership of the Y.M.C.A.?

*B.S. in Education, Boston University, 1949.
Statement of the Problem:

In attempting to restore the education of the body to the scholastic curriculum, efforts have been made to evolve an adequate, stable and universally accepted term which would serve as a basis or foundation for the profession. Today it has evolved to the expression, "Physical Education". The problem comes down to this question in the final analysis: Is Physical Education the adequately stable and universally accepted term? Still another question is suggested: Have we enough supervisors to successfully guide the rapidly growing Physical Education program?

Scope and Limitations of the Study:

1. Research into available material at the Boston University School of Education Library resulted in evidence that a study or census of this specific area had not been attempted in the last twenty years.

2. The only material available was a preliminary study conducted by Dr. John M. Harmon of the School of Education at Boston University.

3. The study was limited to a census of the nomenclature in use in each public school system in the forty-eight states.
Procedure:

It was decided that the most efficient method by which a study of this type could be accomplished would be by a census of the nomenclature in use in each public school system in the forty-eight states. The research was facilitated by the use of "Patterson's American Education Directory". The final analysis was broken down into individual states in order to reveal the comparative growth of the field in that state and to demonstrate that some areas are still clinging to obsolete nomenclatures. Using the Music Supervisor as a comparative basis brings the picture into sharper focus.

Major Findings and Conclusions:

1. "Physical Education" has become the nationally accepted "mast-head" of the profession.

2. Except in isolated areas, all other terms formerly used to label the profession have become obsolete.

3. There are not enough physical education supervisors in the field to adequately direct the rapidly growing program.

4. Physical Education is still in the growing stages and has not yet achieved full growth and recognition.
Statement of the Problem:

The purpose of this study is to develop criteria for the evaluation of the physical education area in the elementary school program. The criteria consist of specific statements indicating desirable conditions and procedures in the physical education area of the elementary school program. Such statements should furnish a means for teachers to examine and evaluate the effectiveness of their own work.

Procedure:

A seminar group of twenty-five graduate students met with Dr. Jane F. Baker for the purpose of developing evaluative criteria for the elementary school. Each member then reviewed and analyzed research in their particular area tentative materials were discussed by the panel. In reviewing the materials names of authorities in each area were noted and lists compiled to be used later in selecting jurors. Each of the authorities selected were sent letters requesting their assistance in criticizing the tentative materials. After the criticisms of the jurors were received, the criteria was again revised, additions and corrections made as deemed necessary in the light of the suggestions of the jurors.
Major Findings and Conclusions:

Attached to the study is the completed section of the evaluative criteria for physical education in final form. The underlying philosophy with which these materials have been developed is that a program can be evaluated in terms of its own philosophy and objectives. This idea is valid, however, only when the school using the criteria has developed a specific statement of philosophy and objectives consistent with pupil needs.

The checklist and evaluation items following reflect a forward looking philosophy and are based on research and the trends of modern elementary physical education programs. Results of evaluation studies are directly related to the earnestness with which staff members evaluate their own work.

The last chapter of this study lists suggestions for using the criteria.

*E.S. in Education, Boston University, 1950.

Statement of the Problem:

The purpose of this study is to prepare a criteria in all areas of special education for physically handicapped children in a typical public school situation that could serve as a standard against which superintendents, school boards, administrators, teachers, and citizens could measure the adequacy of their systems.

Scope and Limitations of the Study:

This study covers seven areas of special education for the physically-handicapped child who is physically and mentally capable of profiting by public school education. These children would fall into three categories:

1. Certain handicaps that would allow the child to have successful classroom experience with auxiliary special instructions.

2. With other types of handicaps, the child must spend the greater part of the day in a special classroom.

3. And finally, although receiving public school education, the nature of the disability makes it mandatory that the child be kept at home.

The seven areas of special education are home instruction, class for crippled children, special instruction for the hard of hearing, class for the deaf, class for the partially sighted,
special instruction for the blind, and special instruction for the speech defective.

Procedure:

In preparing an instrument that would serve as such a standard, the method chosen was a set of checklists and evaluations in administration and each area of special education based in part on the format of the Elementary Evaluative Criteria.

Upon completion, a trial evaluation was made in one school system. From the results, it was determined that the criteria, in that particular instance, was effective.

Next, the checklists were sent to twenty-five recognized leaders in the field of special education with an accompanying letter asking for corrections, additions, and deletions.

Major Findings and Conclusions:

The sixteen member jury, all recognized leaders in the field of special education, favorably endorsed the evaluative criteria.

Criticisms and Suggestions for Further Study:

1. Status survey in each of the seven areas of special education in this study.

2. An evaluative criteria for the special education of the mentally retarded and the trainable.

3. An evaluative criteria for the special education of the mentally gifted.

*B.S. in Ed., Framingham Teacher's College, 1942.

Statement of Problem:
"What goes on in the inner life of the handicapped?" This study will attempt to answer that question, in part, by determining the personal problems, worries, fears, and anxieties of physically-handicapped adolescents, with implications for treatment and guidance by medical personnel, parents, teachers, and all those who make up the environment for these young people.

Scope and Limitations of Study:
In this study, the writer is concerned with those physically-handicapped adolescents mainly listed under "orthopedic" or crippled children, with conditions so severe that they cannot attend regular classes in a public school. The Committee on the Education of the Exceptional Children lists them as follows: Crippled children—those with poliomyelitis, cerebral palsy, congenital deformities, and other orthopedic handicaps; also children with cardiac difficulties, sometimes called "crippled hearts." Thus, adolescents in this study include pupils in special day schools, in special classes in day schools, in hospitals, in hospital schools, and a few home-bound.
Procedure:

From the United States Office of Education Bulletin a list of hospital schools in the United States was secured, and letters written to the principals of each, asking their co-operation in the study.

It appeared that a problem inventory for normal youth would be unlikely to determine the peculiar problems of the physically handicapped, therefore letters were prepared and addressed to the individual pupils explaining the study and soliciting their help in the free-writing instrument and the check list.

Cards were returned which showed a potential population of approximately 1700 pupils who would use the check list of 394 items arranged in eleven areas.

Major Findings and Conclusions:

1. The physically-handicapped adolescent has many problems, worries, fears, and anxieties which might be lessened if those who make up his environment have an understanding of his needs and of the nature of the burden which he bears.

2. Parents contribute to many of the problems of these adolescents by either over-solicitousness and babying of the child, or by rejection either consciously or unconsciously.

3. Medical personnel add many problems and worries, mainly by lack of understanding.

4. Teachers and school personnel add many worries to the physically-handicapped youngster by a lack of training which would result in understanding of the physical disability and the problems and limitations which it engenders.
5. The core course with group guidance, which endeavors to assist all pupils in meeting the needs most common to them without regard to any subject-matter classification, is especially applicable to the physically-handicapped pupil.

Criticisms and Suggestions for Further Study:

1. A Study might be made, comparing the percentage frequency of mention for the total population in this study of the 243 items which are identical with items in the Billett-Starr Inventories, Junior Level and Senior Level, with percentage frequencies of mention of the same problem of a group of comparable size of non-handicapped boys and girls.

2. A study of the problems of boys and girls who are blind.

3. A study of the problems of boys and girls who are deaf.

*A.B., Stanford University
M.A., Middlebury College
Statement of the Problem:

The problem of this investigation is "A National Study of Women's Intramural Sports in Teacher's Colleges and Schools of Education".

Scope and Limitations of the Study:

1. The checklist was sent to 302 directors of women's physical education in all accredited Teachers Colleges and Schools of Education in the United States and Puerto Rico.

2. Returns were received from 252, or 83 per cent, of the recipients; of this number, 221 were deemed usable for the purpose of this study.

3. The institutions responding had a range of enrollment from approximately 200 to 22,000 students; this was representative of 45 states and Puerto Rico.

4. This study has been confined to accredited state teachers colleges and schools of education.

5. The reliability of the replies is limited by variations in individual interpretation.

6. There has been no attempt to obtain from the study, participants' evaluation of any parts of their program, nor of the total effects of the intramurals as they are being conducted.
Procedure:

Three methods were used to collect the items concerning intramurals, 1) documentary analysis, 2) checklist, 3) personal interviews. Final forms were sent to three hundred and two directors of women's physical education in all accredited Teachers Colleges and Schools of Education in the United States, Hawaii and Puerto Rico. All tabulations were done by hand and a special type data sheet was devised for this purpose.

Major Findings and Conclusions:

1. It is apparent from the present study that intramural programs for women in teachers colleges and schools of education in the United States have several needs for development.

2. Administration, sponsorship and financial support are frequently too dependent upon student aid.

3. Groupings for intramural sports are found to be administrative, that is, by classes and social groups, rather than by ability.

4. Opportunities to officiate intramural games should be extended to a greater number of students in teachers colleges.

5. It is notable that of the sports reported "most frequently used" and "most popular", there is listed only two, tennis and badminton that promises personal-life carry-over values to be derived from such phases of intramural programs.

7. Time allotments should be planned within the curricula hours of the teachers colleges; the present dependence upon extra-curricular hours weakens the program as presently offered.
8. On-campus facilities show need for expansion if the possibilities for leadership and health development of future teachers are to be realized through the intramural program.

Criticisms and Suggestions for Further Study:

1. Further research should attempt to evaluate the intramural programs as found in the teachers colleges both quantitatively and qualitatively with those found in other types of collegiate institutions, or with criteria to be established.

2. Attention should be given to the values found by follow-up studies in post-college years of the professional and personal values of intramurals to teachers college participants.

*B.S. in Physical Education, Boston University, C.P.E.S., 1946
Ed. M., Boston University, 1948.

Statement of the Problem:

The present study is "A Job Analysis of Women Supervisors of Physical Education in the Public Schools of the United States". The "Public School Physical Education Supervisor" refers to the person in the school system who has responsibility for organizing and carrying out the program of physical education for girls. Job analysis is defined as that process which results in establishing the identity and relative importance of the various duties performed by an individual in his occupation.

Scope and Limitations of Study:

1. Four hundred and seven copies of the final forms of the rating scales were mailed to the women supervisors in 43 states.
2. The third follow-up brought the total returned to 346 or 85 per cent returns.

Procedure:

To accomplish the purposes of this study, the research involved three major phases. Phase one was the development and classification of a comprehensive list of duties of women supervisors of physical education in public schools; phase two was the devising of an efficient rating scale for evaluation of the duties; and phase three was the procurement of nation-wide professional support of and participation in the study. Four techniques,
documentary analysis, introspection, the personal interview, and the checklist, were used in the development of the list of duties.

Major Findings and Conclusions:

1. The final list of duties may be considered as descriptive of all phases of the job of the women physical education supervisors in the public schools; no new duties were suggested.

2. The data show that supervision in the field of physical education for women is represented by a wide variation in the number and nature of supervisory duties performed.

3. Indications have been received that the job of the women physical education supervisor is under considerable restudy and reevaluation.

Criticisms and Suggestions for Further Study:

Using some of the data included in this investigation, it is hoped that persons working upon curricula for women physical education supervisors might find pertinent materials, both as to the duties identified as the job of the women physical education supervisor, and as to her present job performance, and her own evaluation of the time actually spent and recommended to be spent upon various phases of the job, as well as the factors which affect her performance.

The final list of duties might be used for the following purposes:

a. A checklist for women physical educators interested in supervision as a career.

Statement of the Problem:
This thesis is a study of the duties of women supervisors of physical education in the public high schools of Massachusetts.

Scope and Limitations of the Study:
The general aim of this thesis is to discuss the present duties of women supervisors in physical education at the high school level; to show how the many and varied duties she is called upon to perform tend to frustrate her and eliminate her as a dynamic factor in education; and to suggest a limit to her duties to the end that she may take her proper place and make her peculiar and necessary contribution to the general education of America's youth.

Procedure:
The opinions expressed in this thesis are drawn from three sources:
1. An analysis of answers to questionnaires by 55 supervisors of physical education in Massachusetts public schools.
2. Personal interview with public school supervisors.
3. Personal experience
Major Findings and Conclusions:

1. A study of the data reveals that nearly half of the teachers who replied, 47.27 per cent, spend 52 hours a week on all functions.

2. With the same percentage of teachers spending only 6 hours on supervisory duties, this means that 47.27 per cent of the supervisors spend 46 hours a week in performing functions which are not directly and properly related to the work of supervision.

3. The same figures show that two supervisors, or 3.63 per cent of the supervisors, must spend 63 hours a week on all functions, or 57 hours on duties not immediately and directly related with supervision.

4. Only two supervisors spend as little as 3 hours on non-supervisory duties.

5. Seventeen, or 30.9 per cent, spend 24 hours on non-supervisory duties.

6. The consensus of educational authorities is that supervision is immediately and directly "related to the improvement of the teaching art and the improvement of teachers in service."

Criticisms and Suggestions for Further Study:

1. Only those duties which pertain to this major purpose of supervision should be imposed upon a supervisor. And those present duties which interfere with the accomplishment of this end should be eliminated.

2. A distinction should be made between the content of a physical education program, and collateral subjects. Thus leaving all extraneous matters as an area open to individual discussion
and agreement between school authorities and the potential supervisor.

3. Supervisors of physical education should insist that they be regarded as being on the same administrative level as the heads of academic departments and that they actively protest against the performance of duties unrelated to their professional activity.

*B.S., Boston University, Sargent College of Physical Education, 1946.
b. A guide to be used at both the graduate and undergraduate levels, by those responsible for the preparation and training of women physical education supervisors.

c. A checklist for women physical education supervisors to broaden their comprehension of the possibilities for better job performance.

d. To assist state departments of education in the development and evaluation of job standards of women physical education supervisors.

*B.S. in Physical Education, Boston University C.P.E.S., 1940
Ed. M., Boston, 1948.
Statement of the Problem:

A critical evaluation by teachers of the effects and the values of Little League Baseball on elementary school boys while in a school environment.

Scope and Limitations of the Study:

1. Only 40 questionnaires out of the 50 distributed were returned. A 80% return.

2. The questionnaires had to be answered by recall. However, the twenty teachers who answered the questionnaires on forty boys said that they did not have any difficulty at all in establishing recall.

Procedure:

In an attempt to find out the effects and values of his emotional, physical and mental well-being in relation to his school environment and his scholastic ability, a questionnaire was formed to determine the answers to some of the effects of Little League Baseball on his over-all school life, that is, socially, scholastically etc. Included in the questionnaire are questions regarding many other phases of his school life. Fifty questionnaires were mailed out containing twenty-seven questions to be answered on Little League Ballplayers. Forty, or 80 per cent, of the questionnaires were completed and returned.
Major Findings and Conclusions:

It appears that the points brought forward in defense in Little League are equally as potent as the points brought forward against it. Little League is influential in:

1. Improving the majority of the boys' sportsmanship.
2. Has little, if any, effect on making a boy nervous.
3. It is a favorable factor in developing self control in majority of the boys.
4. Shows that the majority of the boys do not emphasize winning in informal school games and activities.
5. Does not develop a false sense of values in the majority of the boys.
6. Does not cause a decline in homework in the majority of the boys.
7. Does not cause the majority of the boys to suffer a loss of interest in school work.

In addition the thesis showed that Little Leagues also had the following effects:

1. In the majority of cases, Little League does not improve a boy's discipline, but instead causes a decline in it.
2. The majority of the boys showed a decline in manners as a result of playing Little League Baseball.
3. The majority of the boys showed a decline in the cooperation of classroom projects.
4. The majority of the boys did not show any evidence of a development of leadership qualities.
Criticisms and Suggestions for Further Study:

1. That this study be conducted on a much larger area, perhaps state or even nationally.

2. That this study be more elaborate in the sense that it be a more thorough investigation or research study of all the qualities that are developed through the playing of Little League Baseball and which influence a child's school environment or scholastic record.

3. That this study be sent to other people who would have an influence on a child's scholastic achievement, namely the parents.

*Bachelor of Science in History and Government at Boston College, 1950.
Statement of the Problem:

The statement of the problem of this investigation is "A Job Analysis of Selected Directors of College Physical Education".

Scope and Limitations of the Study:

1. The development of a preliminary list of duties thought to be performed by directors of college physical education was compiled by documentary analysis of textbooks, official publications, personal interview, and introspection.

2. Through the cooperation of the state directors of physical education in 41 states, 185 directors of college physical education were selected for participation in this study.

Procedure:

1. A preliminary list of duties thought to be performed by college physical education directors was compiled by reference to: a) textbooks, b) official publications, c) personal interview, d) introspection.

2. The duties thus obtained were reduced to specific statements and organized into a check list.

3. Directors who had been recommended by a jury of professional physical educators were invited by letter to participate.

4. The changes indicated in a pilot study were incorporated in a revised research instrument.
5. The final instrument was then printed and mailed to 150 college physical education directors who had been recommend by the jury and who had expressed their willingness to contribute to the study.

6. The vast amount of data thus collected was statistically analyzed and reduced to a form possible for interpretation.

**Major Findings and Conclusions:**

1. Directors in large institutions spend almost twice as much time in performing administrative functions as do directors in small colleges.

2. The supervisory functions require more time of directors of large institutions than in smaller institutions, although these duties are comparatively light in all institutions.

3. The time spent in instructional duties varies inversely with the size of the institution.

4. Directors spend little time in performing duties related to health and safety services.

5. The number and nature of duties performed by the directors in connection with intercollegiate athletics, and the amount of time spent in these duties, varies inversely with the size of the institution.

6. The amount of time spent in organizing and administering program of intramural athletics varies inversely with the size of the institution.
7. Directors in large institutions spend approximately one-third more time than directors of small institutions in matters pertaining to public relations.

8. Directors in larger institutions spend twice as much time in professional activities outside the institution.

9. The higher academic degrees are essential to advancement to the position of college physical education director.

10. Practically all college physical education directors are responsible for the physical education service program for men.

11. Directors in large institutions have more responsibility for the professional program of health and physical education.

12. The college physical education director should be qualified to perform a variety of duties other than those concerned with the organization and management of a department of physical education.

13. It is important, also, that he develop special competencies necessary for successful supervision and guidance of the work of physical education technicians, such as athletic trainers, physiotherapy aids, and special instructors in such activities as swimming, boxing, dancing, wrestling and football.

*A.B., Lincoln Memorial University, 1943.
M.A., Teachers College, Columbia University, 1944.*

Statement of the Problem:

The purpose of this study is to show the professional and occupational status of those men who were graduated from the Boston University School of Education with a major in Health, Physical Education, and Recreation during the period from 1950 to 1953 inclusive; and to suggest methods by which undergraduates may better prepare themselves for their future profession.

Scope and Limitations of Study:

This survey was concerned with the collection and interpretation of data which would reveal facts regarding the following specific objectives:

1. To find the percentage of graduates majoring in Health, Physical Education, and Recreation at the Boston University School of Education who are still in the field of education.

2. To reveal the location of the respondents.

3. To reveal the intent of the respondents to remain in their present position.

4. To indicate the number of graduates working toward advanced degree.

5. To show the teaching load and the subjects being taught by the respondents.

6. To show the coaching load and the sports being coached by the respondents.

7. To show the initial and present salary range of the respondents in the field of education
8. To show the present salary range of all the respondents.
9. To reveal the summer employment of the respondents in the field of Education.
10. To indicate the number of teaching positions held before obtaining the present teaching position.
11. To show the initial contact of respondents to their teaching positions.
12. To indicate the number of graduates who are in the Armed Forces.
13. To show the occupations or professions other than teaching respondents have entered.
14. To investigate the reasons for leaving the teaching profession.
15. To indicate suggestions which have been offered to help present and future students.

Procedure:

Faculty approval was first obtained for the study. Then addresses were obtained from Boston University Yearbooks and checked and rechecked at the Boston University Placement Service and Boston University Alumni Office.

Since a personal interview with each of the two hundred and fifty-three graduates was impractical, a questionnaire was developed to secure the necessary data. The questionnaire was divided into three distinct parts:

1. General knowledge, to be filled in by all graduates
2. Pertinent only to those graduates who were not in the teaching profession
3. For those graduates still in the teaching profession

The questionnaire, accompanied by a letter of transmittal and a stamped, self-addressed envelope, was mailed to each graduate. Sixty-seven percent of the questionnaires were returned and tabulated.
Major Findings and Conclusions:

1. Eighty-seven, or sixty-one per cent of the respondents are still in the field of Education. Eighty-one, or ninety-three per cent intend to remain in the educational field. Thirty-three, or fifty-nine per cent of the respondents in other occupations and professions show a desire to remain there.

2. Thirty-three respondents are in the Armed Forces. Of this number, seven who are officers, plan to remain in military service.

3. Ninety per cent of the respondents in all professions and occupations, are located in New England. Seventy per cent of this group are located in Massachusetts.

4. The initial teaching salary of the respondents has increased from the $2000 - 2500 bracket in 1951 to the $3000 - 3500 bracket in 1953. The present salaries of forty-five per cent of the respondents teaching are in the $3000 - 3500 range; seventy-nine per cent have salaries above $3000. Four per cent earn above $5000.

5. Seventy-six of the one hundred and sixty-nine respondents are teaching; eleven are full-time students; thirty three are in the Armed Forces; twenty are in closely related fields; twenty-nine are in completely divorced fields.

6. Of the many reasons given for leaving the teaching profession, low starting salaries lead the list with forty-three per cent of the respondents giving this reason.

7. The subjects most frequently taught, in order, are: physical education, general science health, and elementary education.

8. The teaching load of the respondents ranged from teaching one to five subjects.
9. Thirty-one of the seventy-six respondents in the teaching field are still employed in their first teaching position; twenty-five are in the second teaching position; one is in his third teaching position; one is in his fourth teaching position.

10. The sports most frequently coached by the respondents were: football, forty-two; baseball, forty-one; track, eleven; hockey, six; soccer, four.

11. The coaching responsibilities follow: eleven are coaching one sport; twenty-two are coaching two sports; nineteen are coaching three sports; and four are coaching four sports.

12. Thirty-seven of the respondents have summer employment closely related to their field; four plan to attend summer school; eighteen are undecided; twenty-six are in areas divorced from education.

13. Seventy per cent of the respondents in the field of education are studying for, or have received, an advanced degree.

14. Sixty-five per cent of the respondents obtained their positions through Boston University Placement Service, personal contacts, or through student teaching.

Criticisms and Suggestions for Further Study:

1. A follow-up study should be conducted every four years to determine current trends.

2. A study and reevaluation of the apparatus program offered by the physical education department should be conducted.

3. More emphasis should be placed on the student teaching program.
4. More emphasis should be placed on the public speaking program with a suggestion that it be taught in the Junior year rather than the Freshman year.

5. "Methods in Major Sports" should be changed from a classroom lecture course to a more practical workshop course.

6. Emphasis should be placed on technique and procedure for seeking employment. More cooperation and coordination should be developed between the Boston University Placement Service and the Physical Education Department.

*B.S. in Education, Boston University, 1953*

Statement of the Problem:

The purpose of this study has been to present to track coaches, veteran runners, aspirants and enthusiasts of the sport a view of the training methods of leading world athletes and coaches in middle and long distance running; to help improve the low standard of distance running in the United States by showing the training methods of successful coaches and athletes from other parts of the world; and to give an increased insight into the factors which are causing the tremendous improvement in middle and long distance running throughout the world, but not in America.

Scope and Limitations of the Study:

Part I World Leaders
Percy Cerutty, Australia
Trainer of John Landy
Gosta Holmer, Sweden
Armas Valste, Finland
Mohaly Igoli, Hungary
Woldemar Gerschler, Germany
Josey Barthel, Luxembourg
Frantz Stamel, England
Trainer of Roger Bannister
Emil Zatopek, Czechoslovakia
Vladimir Kuts, Russia
Stanislav Jungwirth, Czechoslovakia
Master plan of Training of German Milers

Part II
Ken Doherty, University of Pennsylvania
William Mc Curry, Harvard University
Payton Jordan, Stanford University
Bill Bowerman, University of Oregon
Jim Kihoe, University of Maryland
Procedure:

The following steps were employed by the writer in making this study:

1. Gathering and studying literature pertaining to European, Australian, and American methods and techniques of training for middle and long distance races.

2. Formulation of the problem and outlining of the procedure to be followed in making this study.

3. Personal correspondence and interviews with a number of leading Australian, European, and American authorities and athletes.

4. Compiling data and results of readings, correspondence, and interviews and organization of all into formation of the presentation of the study.

5. The remaining chapters of this study are organized to present to the reader, first the methods of the six most successful coaches in the world in the area of middle and long distance running.

6. Also included in the first part of the study, are the training techniques of some of leading "independent" athletes in the world; their methods are presented to supplement the ideas shown by the leading coaches.

7. The second phase of the study deals with the presentation of methods of American Coaches who have produced the best among America's middle and long distance runners.
8. The final phase of the study deals with a summary and conclusion concerning the findings of this study, and offers a suggested year round training guide aimed at improving the quality of middle and long distance running in the United States.

Major Findings and Conclusions:

1. If Americans are to ever reach world class performance in middle and long distance running they must drastically change their outdated method of training.

2. The American system over and under distance training has to be remodeled to include more interval work.

3. It is also apparent that some form of running must be done throughout the year.

4. American coaches and athletes are more immediately competitive than Europeans and Australians and therefore sacrifice valuable training preparation.

5. Many Americans in the past few years have changed their training to include interval-running. The results have been their meteoric rise to international stardom.

6. There is nothing to prohibit others from following in their footsteps; it is the aim of this study to help show athletes what training is necessary if they wish to attain top flight performances in middle and long distance races.
HISTORICAL
Statement of the Problem:

The problem is to show the scope of the physical education program at Perkins School for the Blind through the use of kodachrome slides.

Scope and Limitations of the Study:

1. These slides were taken over a three year period (1954-1956).

2. There are a hundred and forty-six slides in this project. In most instances the slides were taken during actual class time, during actual performances.

3. The purpose of the accompanying descriptions is to give the viewers an interesting and informative commentary on the material being viewed on the screen.

4. The slides can be shown with the basic descriptions in a little less than an hour.

Major Findings and Conclusions:

The importance of physical education in the curriculum of a school for the blind can not be overemphasized. Educators at Perkins are aware of the importance of this program and its ultimate influence. On the health and normality of the blind child.

*E.S. in Education, Boston University, School of Education.
The writer had two purposes in doing this study:

1. His great interest in athletics and coaching.

2. If the work is acceptable it may be used as a history for the Conference.

In doing this study he had access to all Conference rules, minutes, codes, constitutions and other records. The author had been in direct contact with V. O. Schmidt, the Conference Commissioner.

In order to understand fully these eligibility rules the writer compared them with the Border Intercollegiate Athletic Conference, the Southwestern Conference, the Southeastern Conference, the Missouri Valley Athletic Conference, and the Mountain States Athletic Conference. Secretaries of each of these Conferences sent the writer the latest published eligibility rule books of their Conference.

The study was organized on the following format:

Foreword
Introduction
The Pacific Coast Intercollegiate Athletic Conference
Conferences Compared
Duties of the Conference Commissioner
Eligibility Rules
Conferences Compared
Residence and Transfer Rules
Conferences Compared
Senior College Transfer Rules
Scholarship Rules
Conferences Compared
Amateur Status and Compensation
Conferences Compared
Summary:

1. The status and entrance rule serves to place athletes on the same basis as any other student entering college.

2. Residence and transfer rules prevent athletes from drifting from college to college.

3. Scholarship rules require athletes to attend colleges for educational purposes and not for athletic participation alone.

4. Amateur status and compensation rules prevent colleges from hiring or paying athletes for their athletic services.

5. The play or practice with other teams rule is to protect the athlete and the college.
Statement of the Problem:

The purpose of this paper is to present abstracts of thesis pertaining to physical education submitted to the School of Education at Boston University between January 1948 to January 1953.

Scope and Limitations of the Study:

These abstracts are to be limited to those thesis found in the card catalogue under the heading of physical education and further restricted to those pertaining strictly to physical education as distinct from health education.

A total of forty-three abstracts are listed. Two doctoral dissertations included in this study are denoted by an asterisk in the index and in the main body of the paper.

Procedure:

After a study had been made of various outlines used by institutions that periodically publish abstracts of graduate papers, a form was established to be followed in abstracting these thesis.

Each thesis was summarized according to this predetermined form. Occasionally deviations from the established form were made because of variances in the individual papers.

*B.S. In Education, Boston University, 1943.
TEST CONSTRUCTION
Statement of the Problem:

The study is concerned with the construction and evaluation of an instrument designed to determine the sports knowledge of boys from grades five through eight. This achievement test has a diagnostic effect relating to specific information regarding eight selected sports areas and one general sports area. The aim is to measure the general sports knowledge in these selected areas with the results indicating specific strengths and weaknesses in each grade level and in each sport at each grade level.

Scope and Limitations of Study:

This test was administered to 2,180 boys in the following communities - Braintree, Brockton, Wellesley, and Winchester.

Procedure:

The writers of this thesis began by gathering materials such as sample tests illustrating test forms, sports questions, reviewing previous related research and discussing and formulating the approach and procedures to be utilized in the solution of the problem.

It was decided that the area should be related to the curriculum at the designated grade levels and also to information which pupils should have acquired through other programs because the test measures general sports knowledge.
Each member submitted sample questions pertaining to each sports area incorporated in the test.

Five authorities were chosen to edit and evaluate approximately three-hundred questions. Re-editing began after receiving the first evaluated rating scale.

A sample test was then constructed and administered to thirty pupils on each of the four grade levels. Utilizing the data gathered through sample testing, results of the rating scales and the authors' judgement, a draft of the test was prepared.

The test was then administered to 2,130 boys from fourteen schools within a thirty-mile radius of Boston University. Each test score was plotted on frequency distribution based upon each sport area on each grade level, total test scores on each grade level and total test scores for all grade levels.

Major Findings and Conclusions:

1. The measure of central tendency indicates that the test items found under the sports areas of football, soccer, stunts-tumbling-apparatus, and basketball were of adequate difficulty for each grade level.

2. The measures of central tendency indicates that volleyball, track and field, baseball, swimming and the general sports items, which appeared in the latter section of the test, were not answered by all the pupils. The time limit for the test might be extended for better results.

3. The order of difficulty in the various sports areas proved to be as follows: (1) general sports items; (2) swimming;
(3) track and field; (4) baseball; (5) soccer; (6) volleyball; (7) stunts-tumbling-apparatus; (8) basketball; (9) football.

4. The conclusions indicate the need for more teaching of sports knowledge and better test construction.

Criticisms and Suggestions for Further Studies:

1. Division of the P.V.M.C. Sports Knowledge Test into two sections, each containing 75 questions and administered separately with a 25 minute time limit for each part.

2. The administration of this test to a larger number of cases selected from other sections of the United States.

3. Administer the P.V.M.C. Sports Knowledge Test using control and experimental groups.

4. Comparison of the results after administration of the same test at the high school level within the same community.

5. A study determining the effect of intelligence quotient of the examinee on test accomplishment.

6. A comparison of pupil performance on the test and achievement in other school subjects.

7. Re-examine a similar sampling for the purpose of determining reliability through preparation of two or more parallel forms of the test by repeating the same test at a later date.

8. Re-test the same cases with a revised test for comparison of test results.

9. Conduct an item analysis using the same test.

10. Determine the validity of the P.V.M.C. Sports Knowledge Test through curricular and statistical methods.

*Norman Chadwick, B.S. in Ed., Boston University, 1957
Alfred Meurling, B.S. in Ed., Springfield College, 1931
Frederick A. Peterson, B.S. in Ed., Boston University, 1957
Manuel Varella, B.S. in Ed., Boston University, 1957

Statement of the Problem:

To construct and validate a measure of motor abilities for the purpose of evaluating the level of performance and the capacity for growth of boys in the middle grades. A complementary purpose was the development of the instrument for use as a basis for the prediction of success in industrial arts areas in the upper grades.

Scope and Limitations of the Study:

1. The instrument was designed to measure the potential capacity of boys in the middle grades with reference to various manual aspects necessary for success in the areas of the industrial arts field.

2. It involves a combination of finger dexterity, gross movement of the arms, eye-hand coordination, bi-manual co-ordination, and the ability to use both hands in co-operation, all with respect to their applications to mechanical job situations.

3. A sampling of male students of grades four, five, and six of the elementary schools of two selected systems formed the nucleus of the study.

4. The data for this experimental study were obtained between January, 1956 and April, 1956, for a period of twelve weeks consisting of five full school hours per day.
5. A total of eleven schools in two towns was included in the study.

Procedure:

This study was developed along the following outline: Introductory phases with the selection of the method of measurement, construction of the instrument, description and rationale of selected batteries, preliminary administration, development of scoring procedure and test manual, investigation of reliability and validity of instrument, experimental administration, and statistical treatment of the data.

Major Findings and Conclusions:

1. The value of the test of manipulative performance in discovering motor ability and fitness for the acquisition of skills cannot be established definitely. Only inferences can be made.

2. The only cogent method of determining its value is by actual trial and prolonged study of the correspondence between the predictions made by the test scores and actual future performances of the boys tested.

3. The experimental instrument appeared to be as satisfactory as any derived within the present knowledge of research investigated. It appears to measure distinct, and probably important, features of motor ability.
Criticisms and Suggestions for Further Study:

1. A study of the relationship between general motor development and the process of articulation into the school program.

2. An analysis of exact organization of factors at different age levels require further study.

3. What is the relationship between motor development and other skills in the elementary school over the complete range of grades?

4. What is the nature of motor development between five and twelve years of age?

5. A study of the importance of motor skills in a child's social and emotional adjustments at different stages of age.

6. A comprehensive investigation and study of factors that indicate readiness in the acquisition of desirable skills.

7. The development of a program of motor skills to be used as a supplementary mode of expression in the field of learning difficulty.

8. What levels of mechanical ability, motor skills, physical size and strength, intelligence, and interests are necessary to effective learning of the various units of elementary industrial arts.

9. In terms of child development what is the most opportune time to introduce instruction and what should be the sequence of units in the industrial arts?

10. A Study similar to this study with the female population.

*B.S.E.; Fitchburg State Teachers College, 1937.
Ed. M.; Boston University, 1941.
Statement of the Problem:

This is an attempt to develop a method of measuring, comparing, and evaluating baseball hitters. It is basically different from the conventional method of measuring a baseball hitter in two aspects. First, several areas, or phases of hitting are combined to arrive at a total. Secondly, an effort is made to measure what a batter has done in the clutch, or when the game is close.

Scope and Limitations of the Study:

1. The first objective is to develop a method of finding the most valuable hitter as a result of accumulating several percentages rather than the customary single batting average or percentage.

2. Secondly, the author is searching for an efficient, compact chart that will reflect the hitters in comparison to each other in the various phases of hitting including 1) runs batted in percentage, 2) getting on base percentage, 3) hits percentage.

3. Thirty New England college coaches agreed to use the proposed plan during the 1955 college baseball season.

Procedure:

A tentative plan, or system to accomplish the two objectives was developed by the author. An invitation to participate in the appraisal of the tentative plan was extended to every college head baseball coach in New England.
Thirty agreed to use the plan during the 1955 college baseball season. At the end of the season the questionnaires were returned to the author who tabulated the results.

**Major Findings and Conclusion:**

1. As a result of several coaches using the tentative plan for an entire season and, for the most part, satisfied that it contributed toward measuring, comparing, and evaluating their hitters, it is felt by the writer that some value may be derived from this plan.

2. This system is by no means perfect. It perhaps is not inclusive enough, but the writer hesitates to add any other phases of hitting as it may make the system more difficult to administer.

3. The author feels that the plan as it now stands, somewhat revised as a result of this study, is not perfect, yet it is a step forward toward the development of a more efficient and valid method of measuring and comparing baseball hitter’s performances.

**Criticisms and Suggestions for Further Study:**

1. The development of a method of measuring all base advances, whether as a result of the batter’s action or the base runner’s.

2. A study to prove or disprove the belief that it is more difficult for a left handed batter to be successful against a left handed pitcher, and also a right handed batter against a right handed pitcher,

3. Give the writer’s tentative plan a more complete test by applying it to professional hitters for a season or two and then comparing it against the conventional system.

*B.S. in Ed., Boston University, 1949*

**Statement of the Problem:**

The purpose of this study is to develop a battery of tests that will determine the level of agility attained by fourth, fifth and sixth grade children.

**Scope and Limitations of Study:**

The test battery was administered to 594 fourth, fifth, and sixth grade children enrolled in the public schools of Chelmsford, Massachusetts. This group of 594 subjects was composed of 278 girls and 316 boys. It was determined that one trial of each test would yield a high degree of accuracy.

**Procedure:**

The test battery can be administered in two, thirty minute physical education periods by using the classroom teacher's help in scoring.

The test battery in its present form consists of the following four tests:

1. The shutter run
2. The criss-cross test
3. The side-stepping test
4. The floor-touching test
Major Findings and Conclusions:

1. The test battery, consisting of the shuttle run, the criss-cross test, the side-stepping test, and the floor-touching test, is an objective, reliable and valid measure of agility.
2. The test battery, as described above, is easy to administer and explain.
3. The test battery, as described, is economical in time of administration, space and equipment.
4. T-scores have been computed for the test battery, however, the size of the sample, five-hundred and ninety-four subjects, limits the use of the tables except as a starting point for a teacher or a research worker who wishes to use the test battery.
5. The level of agility seems to be affected by the age level and play experiences of the subjects, as demonstrated by the steady improvement of scores from grade level to grade level.
6. The scores for the total test battery are very similar for both boys and girls, but on the individual tests they differ widely with the boys scoring highest in the shuttle run and lowest in the criss-cross test. The girls scored highest in the criss-cross test and lowest in the side-stepping test.

Criticisms and Suggestions for Further Study:

1. There should be more testing of a greater number of fourth, fifth, and sixth grade pupils and the subsequent development of T-scores for this larger group.
2. An easier method should be used for converting the raw scores to equivalent scores for use in motivation, classifying and evaluating students.
3. The second, third, seventh, and eighth grades should be tested in a similar manner.

4. There should be a study comparing a high or low level of agility with subsequent success or failure in organized activities.

5. The test battery's validity should be improved by using the accepted method of testing a large sampling and then computing correlation coefficients.

*B.S., in Education, Boston University, 1953.*
Statement of the Problem:

The purpose of this study is to make a collection of tests in the area of physical education and to classify them according to three general areas of physical fitness, motor ability, and sports skills tests. This will enable the individual who is seeking a test to come to one source and find the types of tests which are available in these areas.

Scope and Limitations of Study:

The authors have organized the study into the following format:

I. Introduction
II. Organization of the Study
III. Presentation of the Tests

A. Physical Fitness
   Listing 33 different tests.

B. Motor Ability
   Listing 10 different tests.

C. Sports Skills
   Listing 40 different tests, including
   Archery
   Badminton
   Baseball
   Basketball
   Field Hockey
   Handball
   Ice Hockey
Soccer
Softball
Speedball
Swimming
Table Tennis
Tennis
Volleyball

IV. Recommendations

Hamman, Marion, B.A. in Education, Georgia State Women's
College, 1940.
Spaniak, Barton, B.S. in Education, Boston University, 1958.
Statement of the Problem:

It is the purpose of this study to present certain materials which may be used by physical education teachers to evaluate the physical fitness of students participating in the physical education program at Sollers Point Junior-Senior High School. It is felt that the information which has been obtained may be used to inform the student of his skills and potentials, to guide the instructional program, and to place the student in his proper group in the physical education situation.

Scope and Limitations of Study:

The standards presented in this study are the results of test given to two hundred and ninety-five students at Sollers Point Junior-Senior High School. The students were given the battery of four test twice during the school year, during the month of March and during the month of December. The raw scores were converted to T-Scores and correlations were computed to establish reliability and objectivity.

Procedure:

Taking into consideration all of the factors contributing to an efficient and reliable battery of tests the following tests were selected:

1. Pull-ups on the Horizontal Bar
2. Dips on the Parallel Bar
3. 100 foot Maze Run
4. Jump and Reach

The test were conducted over a period of four days or four physical education periods. A warm-up period was permitted prior to the testing. The data was then recorded and analyzed.

Major Findings and Conclusions:

1. From the results obtained it is concluded that the physical fitness test presented here may be used to:
   a. Inform the students of his skills and potentials
   b. Guide the instructional program
   c. Physical Education Class grouping

Criticisms and Suggestions for Further Study:

1. Establish validity for each individual test
2. Establish validity for the battery.
3. Evolve a method of converting test scores into physical education marks in the secondary schools.
4. Increase the number of cases so that norms can be set up in limited areas.

Vennochi, Julius John,* A Battery of Tests to Compare the
Ability in Basketball of Selected Boys in a Junior
High School and a Boy's Club, Unpublished Ed. M. Thesis,

Statement of the Problem:

The purpose of this study is to examine a group of boys
(a) from a local junior high school, and (b) from a local boy's
club by means of a series of four individual tests devised to
measure basketball ability, and to determine whether there is a
difference in basketball ability between the two groups.

Scope and Limitations of the Study:

1. The groups tested consisted of 150 seventh, eighth and
ninth grade boys from the Barnes Junior High School in East
Boston and 150 seven, eighth and ninth grade boys from other
junior high schools throughout Boston who attended the South
End Boy's Club, Boston.

2. The sampling totaled 300 boys, each tested once.

Procedure:

The Robert D. Knox test of basketball ability, a series of
four objective tests, were given to two group of boys. One
group of 150 boys were from a public junior high school, the
other group of 150 boys were from a boy's club. The sampling
totaled 300 boys, each tested once. All timing was done by the
author. When a scorer was necessary, an older boy was asked to
assist. The raw data thus gathered was recorded and statistical-
ly analyzed.
Major Findings and Conclusions:

1. The testing of seventh, eighth, and ninth grade groups in each setting showed a difference in favor of the boy's attending the boy's club.

2. The testing of seventh grade groups in each setting showed that a difference existed in favor of the boys attending the boy's club.

3. The test for the eighth and ninth grade groups showed that this difference became greater and still in favor of the boy's from the boy's club.

4. This study indicates greater basketball skill for boys in the boy's clubs than for boys in a selected junior high schools without boy's club experience.

Criticisms and Suggestions for Further Study:

1. The sampling totals 300 boys, however, each boy was only tested once. The results must be considered in this light.

2. In the school situation, sufficient time was not available to test the boys within a desired period of time.

3. In the school situation absenteeism was a delaying factor

4. Motivation was a unmeasured factor effecting the results of the tests.

5. There is a difference in teaching method and teaching emphasis employed in the school setting and the boy's club setting.

6. Further study should be given this situation.
7. Further studies should correlate test scores with the amount of basketball participation by each boy.

8. It would be advisable to devise a weighing technique to offset the improved ability gained through practice.

9. The battery of tests should be administered three times a year.

*B.S., Boston University, 1950*
Statement of the Problem:

The purpose of this study is to develop norms for the Harmon Physical Fitness Test and the Knox Test of Basketball Ability at the sixth grade level. Also, to correlate each item in the study with each other item to determine the validity of the test and to assure that all test items are necessary.

Scope and Limitations of Study:

The study was conducted in the public schools of Berlin, Southboro, and Northboro, Massachusetts. One hundred sixth grade boys were tested. None of the boys had had any previous experience with the test items as such and none practiced the items before they were administered. All of the boys tested have two periods of physical education per week.

Procedure:

Two sessions per week were necessary in each case to complete the experiment. At the first session of each week the Harmon Test was completed and during the second session the Knox Test.

None of the boys had previous experience with any of the test items except what might have been learned in the regular physical education program. They were not told of the test in advance and all test items were explained to the boys on the day they were administered.
The Harmon Test consists of five items. The higher scores are the best in each case.

1. The standing Broad Jump
2. Push-ups
3. Sit-ups
4. Chalk Jump
5. Colorado Twist

Due to limitation of space the Knox Test was slightly altered from the original test. The lower scores are the best in each case.

1. Obstacle dribble
2. Obstacle dribble and lay-up
3. Wall Bounce Test
4. Cup Reaction Test

The raw scores were analyzed and tabulated. Each item was then converted into T-scores. Each score was then multiplied by the appropriate number and the results recorded as weighted scores.

Major Findings and Conclusions:

1. This study is an indication that reliable physical fitness and skills norms can be established with a minimum of time and equipment.

2. The correlation indicates little relationship between a physical fitness test and a test of basketball ability.

3. The correlation also indicates that within both the Harmon Test and the Knox Test each of the items were necessary to the test.

4. Because no previous tests of this nature had been conducted at this level, it was not possible to compare the norms to any previously established.
Criticisms and Suggestions for Further Study:

The value of this study is limited because of the small number of cases tested. Because of the time limitation the boys were only tested once for each item and that score recorded. No allowance was made for error. It would be ideal if each boy were tested three times and the best score recorded.

*B.S. in Education, Boston University, 1953.

Statement of the Problem:

A study of reaction time of large muscle groups in football players for the purpose of selecting back-up candidates.

Scope and Limitations of the Study:

1. The study was conducted during January and February, 1954. A total of thirty football players were tested, consisting of nine sophomores, fifteen juniors, and six seniors.

2. The age of the candidates ranged from fifteen years, four months to eighteen years, nine months.

3. The candidates tested represented all positions on the team.

4. The test consisted of four series of four responses each, totalling sixteen responses. Each series had one play to the right, designating end run to right, left, forward (buck or dive play), and back (forward pass). Each candidate was allowed one practice play and was given the same instructions.

Procedure:

1. Each candidate was given identical instructions.

2. The time which elapses between the stimulus and the response is read in hundredths of a second directly from the clock.

3. Large muscle reaction time is tested by having the subject face the screen. The moment he receives the stimulus the movement required is a leap or long stride to bring the foot
within striking distance of the inclined plane switch.

Major Findings and Conclusions:

1. The writer feels that quick reaction time to an external stimulus is a good indication of ability in the backerup position. Other factors such as courage, desire, emotional and mental stability must be considered.

2. Candidates with the best reaction time were not only the best football players, but were better in other sports where quick reaction time is a factor.

3. Experience and maturity have a direct effect on reaction time.

4. The testing of reaction time of large muscle groups is a definite aid to the coach in selecting his backerups and halfbacks and also safety men.

Criticisms and Suggestions for Further Study:

1. The equipment had to be moved several times because of its use in various classrooms. This was a difficult operation because of the intricate wiring and the many pieces of equipment.

2. The reaction time clock was delicate and required careful handling.

3. The incline plane switches wear out from the continuous pounding they receive.

*B.S. in Ed., Boston University, 1950.*
CURRICULUM CONSTRUCTION
Presented in this study are extensive source units in wrestling and boxing for secondary schools.

The following format was used:

Introduction
General Statement
Facilities
Equipment
Delimitation
Probable Incidental and Indirect Learning Products
Visual Aids
Brief History
Summary of Rules
Teaching Techniques
Techniques and Strategy
Conditioning
Safety Precautions
Class Organization
Procedure
Definitions
Duties of Officials
Scoring
Paper and Pencil Tests
Bibliography

*B.S., Springfield College, 1950.
Statement of the Problem:

The establishment of a program of officiating skills, techniques, and rules for high school girls in Field Hockey, Basketball and Softball.

Scope and Limitations of the Study:

The proposed program is designed for senior high school girls. The primary purpose of the program is to arouse an interest and develop skills on the part of students in officiating. The aim of the program is to produce as many intramural rating holders as possible with the hope that upon graduation from high school, the desire to become a fully rated official will be realized.

Procedure:

The thesis is presented in the following format:

I. Introduction
   Statement of the problem
   Justification
   Description of situation

II. General Organization and Techniques for Officiating
   Class Organization
   Kodachrome slides
   Magnetic Model Board
Major Findings and Conclusions:

1. The educational values to be gained from an officiating training program for high-school girls are extremely significant in our day and age.

2. The slides used in this study are only typical of one phase of a common foul. Additional slides showing variations of the common fouls would greatly enrich the program.

3. Further research and study could be undertaken to prove officiating does aid in improving a physical education program.

4. Further officiating units could be developed in many other girl's sports.

*B.S. in Education, Bridgewater State Teachers College, 1951.*
Presented in this study are extensive source units in golf, tennis, and badminton on the secondary level.

The following format was used:

Preliminary Teacher Planning  
List of Materials Needed  
Delimitations of the Unit  
Probable Incidental and Indirect Learning Products  
Visual Aids  
References  
Orientation Phase  
Techniques  
Rules  
Strategy  
Dimensions  
Organization  
Orientation of Skills  
Terminology  
Laboratory Phase  
Core Activities  
Optional Related Activities  
Evaluation Phase  
Pencil and Paper Test  
Social Attitudes and Characteristics  

*B.S. in Education, Boston University.

Statement of the Problem:

It is the purpose of the writer to arrange a group of tumbling skills on three levels of difficulty and to separate and grade them for boys in high school. The consideration is that the boys have had no previous training in tumbling. Listed progressively are seventy-two skills that are done on the mats. These are in turn divided into three levels of difficulty of twenty-four each.

Scope and Limitations of Study:

The writer has presented a detailed tumbling program listing seventy-two skills that are divided into three levels of difficulty. Included in his study are:

1. Purpose of tumbling
2. Objectives
3. Organization and Method of Teaching
4. The Mechanics of Tumbling
5. Self Checking of Stunts
6. Progressive Tumbling for High School
   Stunts for Grade IX
   Stunts for Grade X
   Stunts for Grade XI
   Stunts for Grade XII
7. Conclusions
8. Tumbling Aids and References
9. Appendix
   Six and Eight Year Tumbling Program
   Question Section
   The Master Check Sheet
   Grading of Students
   The 3, 1/2, and 6 point check
   Initial Segregation of Class to Squads
10. The Block of Check-sheets

*B.S. in Education, Boston University, 1939.
Statement of the Problem:

The problem of this thesis is to apply the basic educational principles and procedures set forth in Fundamentals of Secondary School Teaching and in the course, The Unit Method in Secondary School, both by Roy O. Billet, to the organization and presentation of two units in water safety and to supplement existing teaching materials with a series of 2x2 slides.

Scope and Limitations of the Study:

The course content is selected mainly from "Life Saving and Water Safety." The American Red Cross, dealing with personal safety, self-rescue in the use of small crafts and the use of small crafts as an aid to the rescue of a drowning victim. Materials from other sources has been added to provide additional information and contrasting points of view. The techniques and content of instruction is consistent with that taught at the National Aquatic School at Camp Kiwanis, South Hanson, Massachusetts.

Content:

I. Unit Organization of the Topic Personal Safety and Self Rescue in the Use of Small Boats
   A. The Unit Assignment
   B. The Unit of Work

II. Unit Organization of the Topic Small Craft Rescue Techniques
   A. The Unit Assignment
   B. The Unit of Work
III. The Six Slide Series
   A. Purpose of the Slides
   B. Annotated List of the 2 x 2 slides

*B. Mus., Boston University, 1951

Statement of the Problem:

The material included in this thesis consists of source units in four team sports for girls: field hockey, soccer, basketball, and softball, listed according to the school year - Fall, Winter, and Spring. They are designed to serve as a guide to the instructor in teaching the sports without delving into the actual mechanics of the activities.

Scope and Limitations of the Study:

Each unit is divided into four sections: (1) The Preliminary Teacher Planning, (2) The Orientation Phase, (3) The Laboratory or Actual Teaching Phase, (4) and the Evaluation Phase.

Reference and orientation materials, skill drills, and game adaptations are gathered to give a concise reference for either the beginning or experienced instructor.

Each unit is complete in itself; each a complete guide to methods and materials for teaching a given sport.

A Unit Outline:

I. Basketball
   A. Preliminary Teacher Planning
   B. Orientation Phase
      1. History of Basketball
      2. Nature of the Game
      3. Digest of the Rules
      4. Terminology
      5. Tips on Position Play and Strategy
C. Laboratory Phase
  1. Skill Drills
  2. Adapted Games
  3. Optional Related Activities

D. Evaluation Phase
  1. Skill Tests
  2. Knowledge Test I
  3. Knowledge Test I - answer key
  4. Knowledge Test II
  5. Knowledge Test II - answer key

* B.S., University of New Hampshire, 1946.
Statement of the Problem:

This study undertakes to construct an instructional program of physical education that will serve to meet the needs and enrich the lives of the boys of the public schools of India and also serve as a guide for the supervisors and teachers of physical education.

Scope and Limitation of the Study:

The study is undertaken in three parts.

Part I presents a brief cultural survey of physical education in India, which reveals certain patterns of physical education activities.

Part II attempts to analyze physical education programs in selected countries - Germany, Sweden, Denmark, England, U.S.A., and U.S.S.R., which indicates activities and designs that are of significance.

Part III deals with the construction of the program of activities for the public schools of India, as derived from the Indian culture and from the programs of selected countries.

Limitations of the study:

1. The study is limited to the cultural implications of the Yogic systems and the influences of Western countries on Indian Physical Education.
2. The study has been limited to the physical education program in the public schools, Grades 1 to 11, namely, Elementary Grades 1 to 5, Middle School grades 6 to 8, and High School Grades 9 to 11.

3. A final limitation is the facilities and equipment available in the Indian public schools.

4. The recommended program is adaptable to the present facilities and considerations of health education and extra class programs are not included.

5. The study is confined to the instructional program of physical education for boys and girls up to Grade V and then onward to Grade XI for boys only.

Procedure:

The chief sources of the data are the large number of books concerning this important phase of India's educational program. Periodical literature, pamphlets, magazines, and other journals were examined for helpful material. Other data used in this study were obtained from the State Department of Education in Madras, India; the office of the International Committee of the North American Y.M.C.A.'s, New York; and the Government of India's Information Library, Washington, D.C.

The study is based upon the following hypotheses:

1. Analyze the Indian culture which may reveal certain patterns of physical education activities.

2. Analyze physical education programs of selected countries which should indicate activities and designs.
3. Based upon the above two analyses - drawn from the Indian culture and from the programs of other countries - and on the basis of the present and future needs, develop a program of physical education for India's public schools.

Major Findings and Conclusions:

A Program of Physical Education Activities for the Public Schools of India.

I. The Philosophy of Physical Education

II. The Needs of Children Which Can Be Met by Physical Education

III. Physical Education Program for the Public Schools of India

IV. Activities for Grades 1 to 3
   Grades 4 and 5
   Grades 6 to 8
   Grades 9 to 11

Criticisms and Suggestions for Further Study:

1. The objectives set in this study have to be rated by other leaders in the field of physical education in India.

2. A similar study should be undertaken for the girl's program of activities in the public schools of India.

3. A national survey and collection of indigenous physical education activities from the various parts of India must be undertaken.

4. Controlled laboratory studies on the effect of Yogic Exercises, from the physiological point of view, have to be undertaken to assess their relative effects on the organisms.

*B.A. Madras University, Madras, India.
Ed. M. Madras University, Madras, India*
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BIBLIOGRAPHY OF ABSTRACTS


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