



8-1-1971

Gymnastics Skills Standards for Male Physical Education Majors at Dickinson State College

Michael J. Ryan

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GYMNASTICS SKILLS STANDARDS FOR MALE
PHYSICAL EDUCATION MAJORS AT
DICKINSON STATE COLLEGE

by
Michael J. Ryan

Bachelor of Science, Dickinson State College 1968

A Thesis
Submitted to the Faculty
of the
University of North Dakota
in partial fulfillment of the requirements
for the degree of
Master of Science

Grand Forks, North Dakota

August
1971

448152

This Thesis submitted by Michael J. Ryan in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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Title Gymnastics Skills Standards for Male Physical Education

Majors at Dickinson State College

Department Health, Physical Education and Recreation

Degree Master of Science

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Signature Michael J. Ryan

Date July 13, 1971

ACKNOWLEDGMENTS

The writer wishes to express his appreciation to the following persons whose cooperation made this thesis possible.

He is especially grateful to Professor Walter C. Koenig, Chairman of his graduate committee, and to Dr. Robert D. Clayton for their guidance and professional direction in completing this study. He is also grateful to Dr. Gordon Richardson and Dr. John Quaday for their time spent as members of the advisory committee.

Appreciation is also expressed to the coaches and physical education instructors who very conscientiously responded to his questionnaire.

A special thanks is extended to Irene Askelson for the typing of this thesis.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	iv
LIST OF TABLES	vi
ABSTRACT	vii
Chapter	
I. INTRODUCTION	1
II. METHODOLOGY	13
III. PRESENTATION AND ANALYSIS OF DATA	16
IV. DISCUSSION	25
V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	28
APPENDIX A	30
APPENDIX B	37
APPENDIX C	39
APPENDIX D	57
APPENDIX E	61
BIBLIOGRAPHY AND SELECTED REFERENCES	66

LIST OF TABLES

Table	Page
1. The Ranking of Free Exercise and Tumbling Skills Selected by more than Seventy Per Cent of the Respondents	17
2. The Ranking of Parallel Bar Skills Selected by more than Seventy Per Cent of the Respondents	18
3. The Ranking of Horizontal Bar Skills Selected by more than Seventy Per Cent of the Respondents	18
4. The Ranking of Still Rings Skills Selected by more than Seventy Per Cent of the Respondents	19
5. The Ranking of Side Horse Skills Selected by more than Seventy Per Cent of the Respondents	19
6. The Ranking of Vaulting Skills Selected by more than Seventy Per Cent of the Respondents	20
7. The Ranking of Trampoline Skills Selected by more than Seventy Per Cent of the Respondents	21
8. Norms in Gymnastics Skills for Male Physical Education Majors at Dickinson State College in 1969-1970	58
9. Norms in Gymnastics Skills for Male Physical Education Majors at Dickinson State College 1970-1971 Test Group	59
10. Norms in Gymnastics Skills for Male Physical Education Majors at Dickinson State College 1970-1971 Group (Second Testing)	60

ABSTRACT

This study was undertaken to develop a standard for the minimum level of proficiency in gymnastics skills for male physical education majors at Dickinson State College.

To set the desired standard, a skill proficiency test in gymnastics had to be devised. This test was constructed in the following fashion. First, an instrument had to be designed which would secure from selected NAIA and NCAA gymnastics coaches and physical education instructors their opinions as to which skills in gymnastics male physical education majors should be able to perform. These data were collected by the use of a questionnaire.

From the results of the questionnaire, the writer determined which gymnastics skills to use as test items. This test was then administered to seventy male physical education majors at Dickinson State College during the 1969-1970 school year and to twenty-three physical education majors during the 1970-1971 school year. The scores were totaled and recorded for each student according to the seven competitive areas of gymnastics.

After these data were collected, group means and standard deviations were computed at the University of North Dakota computer center. From these norms a standard or minimum level of proficiency in gymnastics skills for male physical education majors at Dickinson State College was set at 30 on a table of standard scores.

CHAPTER I

INTRODUCTION

In the field of physical education there is a dire need for the kind of master teacher who is capable of doing a good job of teaching a wide variety of activities. This master teacher is one who has command of his materials and teaching techniques. According to Wickstrom (1), this teacher has the ability to demonstrate the basic skills that are taught.

Many young people studying to be physical education teachers believe that it is not necessary to be able to perform a skill in order to teach it. Through such rationalization they over-look the experience of learning the skills and the insights that are acquired as a result of mastering the skills. They may also be unaware of the difficulties that new teachers have in communicating their instructions and of the tremendous help a demonstration could be to them in their teaching and to their students in learning. Many college instructors are convinced of the necessity that teachers be able to perform well in the activities that they teach. In a report of a national conference in professional preparation by the American Association for Health, Physical Education and Recreation (2), the following was stated about college curriculums:

The curriculum should provide for the competencies essential in teaching the varied and sequential physical education activities and related experiences. Opportunities to develop skill competencies in various sports should be provided in the lower division of the college course. Each student should achieve intermediate performance, or higher, in the activities included in the sports program. Major students who enter the program of physical education and are deficient in skills required in that program should be assigned to classes which will enable them to acquire those skills.

The American Association of Health, Physical Education, and Recreation recommended that gymnastics be included in college physical education professional preparation curriculums. It is the writer's belief that colleges and universities in North Dakota and throughout the United States have not been able to produce enough graduates who have an adequate amount of skill ability in all of the areas in which they teach. This is especially true in gymnastics.

Through personal experience, interviews and correspondence with physical education instructors, the writer has found that in most North Dakota high schools gymnastics is not included in the physical education curriculum. In the few exceptions where it is included, it is on a very basic level and for girls only.

This exclusion of gymnastics from high school physical education curriculums is due perhaps to several things. The smaller schools cannot afford the equipment and have a general lack of space and facilities. It seems that the major reason, however, is the lack of skill ability of physical education majors. Because they have not had a sound undergraduate professional preparation program in the activity, physical education teachers feel unsure of their ability to conduct the activity safely and thoroughly. The related literature indicates that this exclusion of gymnastics from high school physical education programs is

prevalent in many high schools throughout the United States. Gymnastics authorities seem to be in agreement that inadequate teacher preparation in regard to skill ability is the major cause for this exclusion.

Statement of the Problem

The problems of this study were: First, an instrument had to be developed which would secure from selected NAIA and NCAA gymnastics coaches and physical education instructors their opinions as to which gymnastics skills male physical education majors should be able to perform. This was accomplished by the use of a questionnaire. After these data had been collected, the writer constructed a test and administered it to the male physical education majors at Dickinson State College who were enrolled in his gymnastics courses for the 1969-1970 and 1970-1971 school years. From the results of the testing, the writer established norms in gymnastics skills for male physical education majors at Dickinson State College. These norms were used as an indication of the level of proficiency in gymnastics skills at which a standard should be set for these male physical education majors.

Need for the Study

Recently there has been a nationwide surge of interest in physical fitness. It has been found that the development of the upper body of American youth has been inadequate. Gymnastics makes a unique contribution toward overcoming this lack. With this in mind, many schools throughout the country are dusting off apparatus that has stood in storage rooms, seldom used. Now that the equipment is on the floor once again, Loken and Willoughby (3) found that many instructors are not qualified to teach this activity.

According to Frey and Keeney (4), the average physical educator does not include gymnastics in his classes, or else, does an inadequate job of teaching it because his professional preparation was not sufficient. To alleviate this problem the writer feels that there is a need to develop a standard of proficiency in gymnastics skills for male physical education majors. This standard would ensure professional preparation institutions that their graduates should be able to do a good job of teaching gymnastics skills.

Delimitations of the Study

The delimitations of the study were as follows:

1. The instrument used to collect data for the selection of test items was a questionnaire developed by the writer.
2. Only those coaches and physical education instructors from NAIA and selected NCAA institutions in the United States that had competitive teams during the 1968-1969 season were sent the questionnaires.
3. After the test was formulated, only the writer taught and tested the male physical education majors at Dickinson State College.

Limitations

The limitations of normative survey methods of research were assumed to be present. All questions and directions for completion of the questionnaire may not have been interpreted the same by each person who answered the questionnaire.

The testing was limited to physical education majors from Dickinson State College who were enrolled in the writer's gymnastics courses for the 1969-1970 and 1970-1971 school years. The consistency of the tester while scoring and evaluating the students over a long

period of time could be a limitation. The general attitude and motivation of the students being tested also presented limitations to the study. Because of variation in class enrollment the individual practice time allotted for skill development could have proven to be a limitation.

Definitions of Terms

1. Standard--An established rule or average set up by an institution or department that serves as a criterion for evaluation.

2. Competency--Being properly qualified to achieve a goal. The minimum level of acceptance. In this study it would be competency in performing gymnastics skills.

3. Proficiency--Being skilled or well advanced in the art of performing gymnastics skills.

4. Form or execution--The control of one's body in relation to a skill being performed. Example: If a gymnast performs a forward sompersault in a pike position, he must keep his legs straight, he must keep his legs close together, he must be closed up in the pike very tightly and his toes should be pointed.

5. Mechanics of a skill--Refers to the basic parts of a skill. All skills have basic parts that must be performed correctly and in a certain sequence before the skill can be properly executed.

6. Explosive--In gymnastics a skill must be explosive, that is, it whould have a quality of quick, sudden outburst of action.

For further information there is a complete description of each item in Appendix C, p. 40.

Review of Related Literature

Inclusion of Gymnastics in a School Program

Man's common ancestry with the simians calls for him to do gymnastics and tumbling. The instinctive drive of children to climb over and on top of, to swing, to roll, to twist, and to turn is an indication of this calling. Baley (5) suggested that children enjoy these kinds of activities--unless they are overweight or otherwise physically unfit--or unless the activities are presented in a stilted, formalized, or an unchallenging manner.

Hughes (6) believed that track and field and gymnastics were basic activities that involved skills of running, jumping, throwing, and body control that have carry-over value in all other sports and in the activities of daily living. For this reason, it is advisable to include these two activities in the physical education curriculum every year.

In the more progressive grade and high schools the time allotment for gymnastics has been increased in recent years. Because of the great benefits to be derived from gymnastics, Hughes further believed that from one sixth to as much as one quarter of the school year should be devoted to this sport.

According to Loken and Willoughby (3), it has been indicated that gymnastics should be a vital activity in physical fitness training. The movements in this activity are fundamentally big muscle-movements and will develop greatly the muscle groups in the arms, chest, and abdomen. These areas of the body are often neglected in the other sports. Tumbling and trampolining also develop the musculature of the legs. Besides building strength and power, gymnastics also

contributes to such other factors of physical fitness as agility, flexibility, coordination, and balance. A general improvement in posture also may result from this type of activity.

Many of the worthwhile benefits that accrue to the person who practices or participates in gymnastics are a direct consequence of this participation and can often be readily observed on the part of the experienced gymnastics performer. Musker, et al. (7) stated that the concern is with the long-lasting benefits that develop over a period of time, not with the immediate temporary effects of exercise such as an increase in the heart rate or rate of breathing.

Although some findings of the benefits of gymnastics participation have resulted from scientifically conducted research studies, the bulk of evidence in this area involves results of empirical studies and observations. One needs only to attend a gymnastics meet and observe the superior physique and muscular development possessed by the participants. Musker, et al. (7) found at the University of Iowa, that

1. The college students enrolled in gymnastics had a higher level of physical fitness than did the students enrolled in several other classes; and
2. Students participating in a trampoline class experienced definite increase in the flexibility of the ankle joint.

According to Loken and Willoughby (3), gymnastics contributes to and develops such mental qualities as alertness, daring and precision. Such character traits as self-confidence, perseverance and self-discipline are developed through gymnastics. Creative ability has unlimited opportunity in the sport. Great pleasure is derived from

working out possible combinations and routines. This develops in the gymnast an understanding of symmetry, continuity, coordination, balance, and timing. It also develops an understanding of the need for strength and endurance on the part of the gymnast in order to complete some of the routines.

Loken and Willoughby (3) also stated that other values are the fun and enjoyment received from participating in the activity. The joy of successfully completing a stunt is outstanding. The elation of learning a handspring, kip, or giant swing is indescribable. To see children laughing and shouting with joy and pride as they successfully complete stunts is indeed a rewarding experience to the gymnastics instructor.

Gymnastics Training for Male Physical Educators

With this great need for gymnastics in American schools to promote physical fitness and the other benefits derived from the sport, why then is gymnastics not included in more physical education curriculums?

Gymnastics is not included in many school physical education programs because of the relative dearth of trained personnel to conduct the activity. The average physical educator does not feel sufficiently confident and competent, with only his college methods course as a background, to promote gymnastics in the school program. Frey and Keeney (4) suggested that only a combination of a wider realization of the values involved, improved preparation in teacher training institutions, more and better literature and films, and an increasing number and quality of gymnastics clinics will alleviate this difficulty.

Competency and Proficiency Standards

Citizens and the teaching profession have a concern for a high standard of personnel selection for those who teach and lead children and youth. A profession has the right and responsibility to establish criteria for the identification, selection and retention of its personnel. This is seldom questioned; however, the ability to do so effectively is often challenged (AAHPER Committee Report 8).

The minimum physical qualifications and the preparation for educating teachers to teach activities is one of the continuing dilemmas in physical education. Nelson (9) stated that college and university instructors have always recognized to some extent the desirability of teachers being able to perform well in the activities that they teach, even though it is recognized that all personal qualities are important. It seems, however, that most schools have been unwilling to do much more than give lip service to this teaching requisite.

Curriculums for professional preparation in physical education hold the key to the answer. There are entirely too many uninspired and inadequately trained people teaching the physical activity courses in teacher education curriculums. If methods and materials in physical education are not of central importance to the embryonic teacher, Wickstrom (1) asked, what is important?

Physical education programs today are a reflection of the lost art of teaching physical activities. There is insufficient emphasis on objectives having to do with teaching physical education activities and on the subsequent development of physical fitness and the physical skill. As members of a profession, physical educators should be

strongly committed to development in these two essential areas. According to Wickstrom, physical educators have allowed themselves to be buffeted about by various forces and pressures and seem to have lost sight of the basic and unique obligations teachers have in the education of the child. Appropriately, physical education teachers should stress the physical development of the child and treat the other aspects of this development as subordinate. When physical education programs become either overextended or narrow, it is exceedingly difficult to do an effective job in the areas of developing organic vigor and physical skills.

Recently, attention has been directed to competency and proficiency examinations in physical education. For example, at the State University of New York (Buffalo) examinations are given upon completion of an undergraduate program to attest to competence in the major field or selected phase or phases of it. Graduation signifies that an individual has satisfactorily completed requisite course offerings pertinent to a chosen field. Meyers (10) stated that satisfactory completion of the undergraduate program denotes that sometime during the undergraduate program the individual has displayed an acceptable level of skill and knowledge in a variety of physical education activities--the subject matter which the individual is prepared to teach and which may properly be termed the basic tools of the profession.

As with any examination, a minimum level of performance should be established and adhered to as a requirement for graduation. The standard should be realistic in terms of student capabilities and the competence desired for a beginning teacher. Also, the standard should be compatible with the requirements to the extent that a student who

completes a given course satisfactorily and has retained the learning should be able to meet the standards. Meyers further stated that students who fail to perform satisfactorily in one or more of the areas concerned should be expected to review and practice the material concerned until the standards can be attained.

Dale O. Nelson (9) asked several selected physical education leaders in the United States questions as to how they felt about proficiency requirements for physical education majors. All replies indicated a strong position for having physical ability, but none indicated what a desirable degree of mastery should be. Thus, it is difficult to determine which skills to include in a standard proficiency test, and even more difficult to determine a standard of proficiency in gymnastics skills for male physical education majors.

At the University of Illinois, Mr. Edward Gombos (11) has devised a "Card and Chart" system for evaluating his students. In this "Card and Chart" system, eighty per cent of a student's grade is based on his skill ability. Mr. Gombos' system seems to have tremendous value for motivating and evaluating purposes. It also gives further indication that skill ability is of prime importance.

The University of North Dakota, Denver University, Arkansas State College, Eastern Carolina University, Kent State University and a few other colleges and universities throughout the United States have skill proficiency examinations for beginning physical education majors. These proficiency examinations make certain that the beginning physical education majors have the basic qualifications for their proposed major field. It seems, however, that none of these institutions have a standard test in gymnastics skills that physical education majors

must pass at the completion of a course. Clarke (12) suggested that a standard test of basic gymnastics skills is necessary, if an institution wants to be assured that its graduating physical education majors are qualified to teach gymnastics.

In the area of gymnastics little work has been done in measuring general gymnastics ability, except as based upon subjective judgment.

Summary of Related Literature

Leading physical educators throughout the United States agreed that college teacher training programs for physical education majors should require a standard level of skill proficiency in all areas in which future teachers might become involved.

In many sports and recreational activities there are individual institutional standards of skill proficiency already established, and hopefully adhered to. The related literature indicated that a standard of skill proficiency is desirable in all areas of teacher preparation in physical education. For the most part, these proficiency and competency exams have been given at the beginning of a student's program for placement and prediction purposes. It is the writer's belief that proficiency exams should be given at the completion of a course, and if a student does not meet the specified standard, he should practice and study until he can meet the standard. The related literature also implied that, in areas where a standard of skill ability is not already established, one should be established and given at the completion of a course to ensure sound teacher preparation programs in American colleges and universities.

CHAPTER II

METHODOLOGY

Selecting Skills for the Competency Test

Data to determine the selection of skills to be used in the gymnastics skills proficiency test were gathered by the use of a questionnaire. The questionnaire was constructed by the writer and worded so that the time requirements on the part of the respondents was minimal. The questionnaire contained lists of basic skills from seven competitive areas of gymnastics. Each respondent was asked to check the skills from each list that, in his opinion, a physical education major should be able to perform. A return self-addressed, stamped envelope was included.

The mailing list for this study was secured by the writer while attending the 1969 NAIA National Gymnastics Championships and National NAIA Coaches meetings at Macomb, Illinois. A letter of transmittal and the questionnaires were sent in the early part of September, 1969, to fifty-eight NAIA and NCAA colleges and universities sponsoring gymnastics teams during the 1968-1969 season. A second letter was sent in October as a follow-up to those coaches who had not replied to the first questionnaire. Copies of these letters and the questionnaire appear in Appendix A, p. 31.

When the questionnaires were returned, the writer tabulated the

results through the use of a frequency distribution table. If seventy per cent of the coaches or more selected a skill, it was used as a test item.

Test Construction

The writer then constructed the test in following manner. All gymnastics skills have basic mechanical parts that must be done in a certain sequence before a skill can be performed correctly. Through the use of textbooks and from his own personal experience as a gymnast and coach, the writer broke down each skill into its basic mechanical parts and awarded a point value to each skill based on the difficulty of these parts. Points were also given for form and execution. A complete description and point value for each skill appears in Appendix C, p. 40.

Test Application

The writer then tested the physical education majors at Dickinson State College who were enrolled in gymnastics for the 1969-1970 and 1970-1971 school years. These students were tested at the end of each quarter, thus giving each student approximately six weeks to practice and master the skills. Previous to this the writer had explained and demonstrated the skills, showed films, and instructed and spotted the students on all of the skills during the first three weeks of each quarter. The students were divided into three squads and rotated to and from the various apparatus during practice sessions and during the testing. All gymnastics classes met twice each week for fifty minute periods. The same time periods were used for testing. During the remainder of the quarter (approximately six weeks) the students were

helped individually and allowed time for practicing the skills. During the testing, each student was allowed two attempts at a skill, both of which were scored but only the higher score was recorded.

The scores for each student tested were tabulated and recorded according to areas, and again for a total of all seven competitive areas. At the completion of the testing the mean scores and the standard deviations of scores in each area were found. These scores were then used as an indication as to the level of skill proficiency in gymnastics at which a standard should be set for male physical education majors at Dickinson State College.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

Introduction

This study was undertaken to set a standard in gymnastics skill ability for male physical education majors at Dickinson State College. To set a standard the writer had to construct a test which would measure gymnastics skill ability. However, before this could be done the writer had to find which gymnastics skills should be used as test items. These skills or test items were found through the use of a questionnaire. A frequency distribution table was used to analyze the questionnaires and determine which skills would be used as test items.

After the test items were selected, the writer then tested the male physical education majors at Dickinson State College enrolled in gymnastics for the 1969-1970 and 1970-1971 school years. The test scores were recorded and then programmed at the University of North Dakota computer center. From these data the mean and standard deviation of each area tested were found.

Norms were established and set up on a scale of standard scores. From this the writer set the standard of minimum level of proficiency in gymnastics skills for male physical education majors at Dickinson State College at thirty (30) on the scale of standard scores.

Selection of Items for Skills Test

The data from the questionnaires were analyzed by the use of a frequency distribution table in order to determine which skills would be used as test items.

Fifty-eight questionnaires were mailed. Forty-three questionnaires were returned. Three of them were returned by women coaches and were not used because they were incomplete since women's gymnastics does not entail the same events as men's gymnastics. This gave a final total of forty responses, or seventy per cent. It was then decided that if seventy per cent of the respondents to the questionnaire selected a skill, it would be used as a test item.

TABLE 1

THE RANKING OF FREE EXERCISE AND TUMBLING SKILLS SELECTED
BY MORE THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Forward roll	39	100
2. Forward handspring	39	100
3. Backward roll	38	97
4. Cartwheel	38	97
5. Round off	38	97
6. Backward extension	35	89
7. Head balance	31	79
8. Hand balance	30	76
9. Headspring	28	71

The following skills did not meet the criterion of seventy per cent selection by the respondents to the questionnaire: one arm cartwheel, neck spring, tinsica, forward sommersault, backward sommersault, backward handspring, double elbow lever, valdez, scales, bent elbow and hip press, pin wheel, full twist dive roll, kip and shoulder roll.

TABLE 2

THE RANKING OF PARALLEL BAR SKILLS SELECTED BY MORE
THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Front support swing	38	97
2. Rear dismount	38	97
3. Front dismount	37	93
4. Shoulder balance	35	89
5. Forward roll	35	89
6. Swinging dips	33	84
7. Straddle travel	32	82
8. Front support turn	31	79
9. Front uprise	30	76
10. Back uprise	30	76
11. Backward roll	28	71
12. Single leg cut off	28	71

The single leg cut on, double leg cut on, hand balance, top kip, swing to shoulder balance, end kip, cast to upper arm support and glide kip were the skills included in the questionnaire that did not meet the criterion of seventy per cent selection by the respondents.

TABLE 3

THE RANKING OF HORIZONTAL BAR SKILLS SELECTED BY MORE
THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Kip	33	84
2. Back hip circle	33	84
3. Single knee circle forward	32	82
4. Single knee circle backward	31	79
5. Skin the cat	28	71
6. Back dismount	28	71

The following skills did not meet the criterion of seventy per cent selection by the respondents to the questionnaire: double knee circle front, crotch circle, double knee circle backward, hock swing dismount, belly grind, seat rise and dismount, sole circle, reverse

kip, back uprise, back sole circle dismount, half giant swing, flyaway, flank vault, single leg circle mount, hip circle front, cast, swinging turns, underswing dismount, seat circle forward, and forward giant swing.

TABLE 4

THE RANKING OF STILL RINGS SKILLS SELECTED BY MORE THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Piked hang	36	92
2. Inverted hang	35	89
3. Skin the cat	31	79
4. Chin-ups	30	76
5. Double leg cut off dismount	28	71
6. Dislocate	28	71
7. Inlocate	28	71
8. Bird's nest	27	70
9. Shoulder balance	27	70

The monkey hang, single leg cut off, front uprise, reverse kip, flyaway, hand balance, back lever, muscle up, L seat and dislocate shoot to shoulder balance did not meet the criterion of seventy per cent selection by the respondents to the questionnaire.

TABLE 5

THE RANKING OF SIDE HORSE SKILLS SELECTED BY MORE THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Single leg half circle	34	87
2. Single rear dismount	33	84
3. Single leg half circle travel	32	82
4. Alternate leg circles	29	74

The following skills did not meet the criterion of seventy per cent

selection by the respondents to the questionnaire: single leg reverse circle, double leg half circle, right feint, regular scissors, reverse scissors, double leg dismount, double rear dismount, triple rear dismount, double leg circles and the flank mount.

TABLE 6

THE RANKING OF VAULTING SKILLS SELECTED BY MORE THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Front vault	34	87
2. Flank vault	33	84
3. Squat stand and leap	31	79
4. Squat vault	31	79
5. Rear vault	29	74
6. Straddle vault	29	74

The wolf vault, straddle stand and jump, their vault, rear vault with one half twist, stoop vault, neckspring, headspring, handspring, rear scissors, cartwheel, "Yamashita," and hecht vaults did not meet the criterion of seventy per cent selection by the respondents to the questionnaire.

TABLE 7

THE RANKING OF TRAMPOLINE SKILLS SELECTED BY MORE
THAN SEVENTY PER CENT OF THE RESPONDENTS

Skills Which Meet Criterion of 70 Per Cent	Number of Coaches Selecting Skill	Per Cent of Coaches Selecting Skill
1. Front drop	38	97
2. Seat drop	38	97
3. Back drop	37	93
4. Tuck bounce	35	89
5. Knee drop	35	89
6. Swivel hips	35	89
7. Front sommersault	32	82
8. Half turntable	30	76
9. Half pirouette	29	74
10. Pike bounce	29	74
11. Back drop pull-over	28	71
12. Cradle	28	71
13. Half twist to back drop	28	71
14. Back drop to front drop	28	71
15. Full pirouette	28	71
16. Half twist to front drop	27	70
17. Back sommersault	27	70

The following skills did not meet the criterion of seventy per cent selection by the respondents to the questionnaire: full twist to seat drop, front dive to back drop, barani, three quarter back sommersault to front drop, front one and one quarter sommersault to stomach drop, back one and one quarter sommersault to seat drop, kaboom, cody, twisting sommersault front, twisting sommersault back, kill bounce, hand and knee drop and back drop full twist to back drop.

All of the skills shown on Tables 1 through 7 were then used as test items.

Validity of Test Items

The writer theorized that all of the test items possessed undisputable face validity. The writer's supporting evidence is that these skills are recommended by leading gymnastics authorities

throughout the United States as being the skills that future physical education teachers should be able to perform. The authorities to which the writer refers are the respondents to the questionnaire. Further evidence of this validity would be the gymnastics textbooks that the writer used in the related literature section of this study and for the skill descriptions of the test items.

Reliability of Test Items

The test items were assumed to be reliable because they have been used previously in proficiency and competency examinations for the purpose of predictability and placement of physical education majors. These test items were used in a test re-test type situation in a thesis study at the University of North Dakota by J. Patrick Harris (14).

Many of these skills were also used and proved reliable for testing the gymnastics skill ability of physical education majors at the University of Illinois by Mr. Ed Gombos (11), in his "Card and Chart System."

When form and technical execution in performance is being judged (as in gymnastics skills, for example), complete reliance is placed upon a rating scale, (in the case of this study it was the writer's scale), involving subjective judgment, but the observer is directed and uses an agreed-upon procedure and weighting scheme.

The reliability of ratings can be increased by combining the ratings made by several judges of the same pupil or subject. This was not feasible for this particular study because of the limited number of qualified personnel to administer the test. Therefore, the writer

verified reliability by using a test-retest type situation. By checking the scores of all three groups tested it can be seen that the mean scores in all seven areas on all three tests do not deviate more than one half standard deviation. This would indicate to the writer that the test items and the tester were reliable.

Establishing Point Values for Each of the Selected Items

After the skills to use as test items had been determined, a point value for each skill had to be established. All gymnastics skills have basic parts or mechanical aspects that must be executed in the proper sequence before a skill can be performed correctly.

Through the use of textbooks and his own personal experience as a gymnast and coach, the writer broke down each skill into these mechanical parts. Each skill was then assigned a point value based on its parts in relation to their difficulty or simplicity, plus form.

An example of this skill break down would be: To perform the forward sommersault on the trampoline correctly, the gymnast must:

1. after a high bounce, reach for height with the arms and hands (two points);
2. bend the body at the waist and bring the knees up quickly and tightly to the chest in a tuck position (two points);
3. throw the head forward and down to cause the rotation necessary to complete the skill (two points).

An additional two points is awarded for good form, and two additional points for control upon landing. This skill executed in the correct fashion as described above is worth a total of ten points.

Results of Testing Major Students

Seventy male physical education majors enrolled in gymnastics at Dickinson State College for the 1969-1970 school year and twenty-three for the 1970-1971 school year were tested on the selected gymnastics skills. Scores for each student in all seven areas tested were recorded, and group means and standard deviations were computed at the University of North Dakota Computer Center, for the students tested in 1969-1970; and the mean and standard deviation for the 1970-1971 group of students were computed by the writer.

From these norms the writer set the standard of minimum level of proficiency in gymnastics skills for male physical education majors at Dickinson State College at thirty (30) on the eight sigma scale of standard scores. Refer to Appendix D, Tables 8, 9, and 10 for a complete description of the norms.

CHAPTER IV

DISCUSSION

It was the writer's belief that undergraduate professional preparation programs in gymnastics, both in North Dakota and throughout the United States, have not proved adequate in turning out highly skilled graduates. The related literature supported this belief and gave indication that perhaps the reason many colleges and universities have been unable to produce highly skilled students in gymnastics is that there is no standard level of skill proficiency required in the courses being offered for physical education majors.

It was the purpose of this study to establish a standard level of proficiency in gymnastics skills for male physical education majors at Dickinson State College. This standard would be used as a criterion for evaluation, and also as a motivational device for physical education majors at Dickinson State College. The writer assumed that if the students were made aware of an average test score in a specific area and how well they must perform in order to attain an average or higher grade they would be motivated to work harder. It was hoped that the end results would produce a greater number of teachers who have a high level of skill ability in gymnastics. If this were the case, then perhaps more elementary and high school teachers would include gymnastics in their physical education curriculums. The end results

of this, as discussed and evidenced by the related literature, would be of tremendous value in the development of the physical fitness and recreational entertainment of American youth.

It was the writer's belief that the skills that were not selected as test items by the respondents to the questionnaire, were omitted for the following reasons. The skills not used as test items were assumed to be too advanced and difficult to master for a physical education major who had had no experience either as a teacher or student. Secondly, there was the possibility that some skills were not selected because of the respondent's interpretation of the terminology used in the questionnaire.

In a previous study done by the writer, it was found that there were very few high schools in North Dakota that included gymnastics as a part of their physical education curriculums, and those that did had programs for women only. It was also found that no high school in the state of North Dakota had a competitive gymnastics team for men. It would then seem that very few physical education students entering Dickinson State College would have had any previous training in gymnastics.

It was deemed necessary to use 70 per cent as a cut off in establishing a criterion for test items. Had more skills been selected as test items, it would not have been feasible in terms of time to teach and evaluate each student on all of the skills. It would also have been impossible for the students to become proficiently skillful had too many skills been selected.

The norms did not vary more than one-half standard deviation from the 1969-1970 test group to the 1970-1971 test group. This should

indicate that the results of the testing were feasible and realistic in terms of the physical capabilities in gymnastics skill ability of the average male physical education major at Dickinson State College.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was undertaken to set a standard of skill proficiency in gymnastics for male physical education majors at Dickinson State College.

Selected NAIA and NCAA gymnastics coaches and physical education instructors throughout the United States were surveyed to find out which skills in gymnastics physical education majors should be able to perform. These skills were then used as test items for a gymnastics skill proficiency test.

The writer tested seventy male physical education majors at Dickinson State College enrolled in gymnastics for the 1969-1970 school year, and twenty-three students enrolled in gymnastics for the 1970-1971 school year. The scores from this testing were recorded for each student on all skills in each area. After these data were collected, group means and standard deviations were computed at the University of North Dakota Computer Center for the 1969-1970 group and by the writer for the 1970-1971 group.

From these norms the writer set the standard, minimum level of proficiency in gymnastics skill ability for male physical education majors at Dickinson State College, at thirty on a scale of standard scores.

Conclusions

The following conclusions were believed to be justified by the analysis of the data obtained in the study:

1. The questionnaire proved to be a very practical and feasible method of selecting test items.
2. The standard set by the writer is justifiable and realistic in terms of student capabilities and the competence desired for a beginning teacher.

Recommendations

1. It is recommended that the test be given several times over a period of years for the purpose of comparison with norms to further substantiate the results of the original test.
2. The writer recommends that a standard of gymnastics skill ability for both men and women be set by other colleges and universities in North Dakota and throughout the United States.
3. It is recommended that a standard of gymnastics skill ability be set for female physical education majors as well as male physical education majors at Dickinson State College.
4. It is also recommended that this test be given by two or more colleges within the state of North Dakota for purposes of comparison of the norms.

Dear Coach,

Please allow me to take up a few minutes of your time. I am a graduate student at the University of North Dakota and also a gymnastic coach and instructor at Dickinson State College. I am presently beginning work on my master's thesis. I am doing research in the area of teaching methodology in gymnastics for male physical education majors. It is my belief that the ability for future teachers to perform basic skills is as important as their having a general knowledge of each area in which they teach. It is, therefore, the purpose of my study to develop a standard test of basic gymnastic skills for male physical education majors.

In the following questionnaire, I have listed several skills in seven areas of gymnastics. Each coach and physical education instructor receiving this questionnaire is asked to select only those skills from each area which he feels future teachers should be able to perform. After these questionnaires are returned, I can determine which skills in each area, the majority of coaches and instructors think necessary, in which future teachers should be proficient. The results will then be used to construct a standard test of basic gymnastics skills for male physical education majors.

Your cooperation in filling out the following questionnaire will be greatly appreciated. Please find the enclosed self-addressed, stamped envelope and return the questionnaire to me at your earliest possible convenience.

Sincerely yours,

Michael J. Ryan
Gymnastics Coach
Dickinson State College

Questionnaire

Directions: Check those skills from each list that you consider to be the most important skills in which future teachers should be able to demonstrate proficiency. (Note: The lists have been cut short for your convenience and the feasibility of the study. If you think of some extra skills that are not included in a particular area and you consider them necessary, use the spaces at the bottom of the lists to write them in).

Floor Exercise Skills

- | | |
|---------------------------|------------------------------------|
| 1. ___ forward roll | 11. ___ forward sommersault |
| 2. ___ backward roll | 12. ___ backward sommersault |
| 3. ___ back extension | 13. ___ backward handspring |
| 4. ___ cartwheel | 14. ___ hand balance |
| 5. ___ one-arm cartwheel | 15. ___ head balance |
| 6. ___ round-off | 16. ___ double elbow lever |
| 7. ___ neckspring | 17. ___ valdez |
| 8. ___ headspring | 18. ___ various scales |
| 9. ___ forward handspring | 19. ___ bent elbow, bent hip press |
| 10. ___ tinsica | 20. ___ pinwheel |
| _____ | _____ |

Parallel Bars Skills

- | | |
|----------------------------|--|
| 1. ___ front support swing | 11. ___ forward roll to straddle seat |
| 2. ___ front support turn | 12. ___ backward roll to straddle seat |
| 3. ___ front dismount | 13. ___ shoulder balance |
| 4. ___ rear dismount | 14. ___ front uprise |
| 5. ___ straddle travel | 15. ___ back uprise |
| 6. ___ swinging dips | 16. ___ top kip |
| 7. ___ single leg cut off | 17. ___ swing to shoulder balance |
| 8. ___ single leg cut on | 18. ___ end kip |

Parallel Bars Skills continued

- | | | | |
|-----------|--------------------|-----------|------------------------|
| 9. _____ | double leg cut off | 19. _____ | cast to upper arm hang |
| 10. _____ | hand balance | 20. _____ | glide kip |
| _____ | _____ | _____ | _____ |

Horizontal Bar Skills

- | | | | |
|-----------|-----------------------------|-----------|------------------------------|
| 1. _____ | back dismount | 11. _____ | kip |
| 2. _____ | skin the cat | 12. _____ | seat rise and dismount |
| 3. _____ | single knee circle forward | 13. _____ | sole circle (front and back) |
| 4. _____ | single knee circle backward | 14. _____ | reverse kip |
| 5. _____ | crotch circle | 15. _____ | back uprise |
| 6. _____ | back hip circle | 16. _____ | back sole circle dismount |
| 7. _____ | belly grind mount | 17. _____ | half giant swing |
| 8. _____ | double knee circle forward | 18. _____ | reverse giant swing |
| 9. _____ | double knee circle backward | 19. _____ | flyaway |
| 10. _____ | hack swing dismount | 20. _____ | flank vault |
| _____ | _____ | _____ | _____ |

Still Rings

- | | | | |
|----------|---------------|-----------|-----------------------------|
| 1. _____ | chinups | 11. _____ | kip to straight arm support |
| 2. _____ | pike hang | 12. _____ | forward roll |
| 3. _____ | inverted hang | 13. _____ | back uprise |
| 4. _____ | bird's nest | 14. _____ | front uprise |
| 5. _____ | skin the cat | 15. _____ | shoulder balance |
| 6. _____ | monkey hang | 16. _____ | reverse kip |

Still Rings continued

- | | | | |
|-----------|--------------------------------|-----------|--------------|
| 7. _____ | single leg cut off | 17. _____ | flyaway |
| 8. _____ | double leg cut off
dismount | 18. _____ | hand balance |
| 9. _____ | dislocate | _____ | _____ |
| 10. _____ | inlocate | _____ | _____ |

Side Horse

- | | | | |
|----------|----------------------------------|-----------|----------------------|
| 1. _____ | single leg half
circle | 9. _____ | reverse scissors |
| 2. _____ | alternate leg
circles | 10. _____ | double rear dismount |
| 3. _____ | single leg half
circle travel | 11. _____ | double leg dismount |
| 4. _____ | single leg reverse
circle | 12. _____ | triple rear dismount |
| 5. _____ | double leg half
circle | _____ | _____ |
| 6. _____ | right feint | _____ | _____ |
| 7. _____ | single rear dismount | _____ | _____ |
| 8. _____ | regular scissors | _____ | _____ |

Vaulting (The first ten vaults are for cross buck only, while the following ten vaults are for cross buck and long horse).

- | | | | |
|----------|----------------------|-----------|---------------|
| 1. _____ | front vault | 11. _____ | stoop vault |
| 2. _____ | flank vault | 12. _____ | neckspring |
| 3. _____ | rear vault | 13. _____ | head-spring |
| 4. _____ | squat stand and leap | 14. _____ | hand-spring |
| 5. _____ | wolf vault | 15. _____ | rear scissors |
| 6. _____ | squat vault | 16. _____ | cartwheel |

Vaulting continued

- | | | | |
|-----------|--|-----------|-------------|
| 7. _____ | straddle stand and
jump dismount | 17. _____ | Yamashita |
| 8. _____ | straddle vault | 18. _____ | hecht vault |
| 9. _____ | thief vault | _____ | _____ |
| 10. _____ | rear vault with $\frac{1}{2}$
twist | _____ | _____ |

Trampoline

- | | | | |
|-----------|-----------------------------|-----------|---|
| 1. _____ | half pirouette | 17. _____ | cradle |
| 2. _____ | full pirouette | 18. _____ | front sommersault |
| 3. _____ | tuck bounce | 19. _____ | back sommersault |
| 4. _____ | pike bounce | 20. _____ | barani |
| 5. _____ | seat drop | 21. _____ | three quarter back
sommersault to front drop |
| 6. _____ | front drop | 22. _____ | front $1\frac{1}{4}$ sommersault
to stomach |
| 7. _____ | back drop | 23. _____ | back $1\frac{1}{4}$ sommersault
to seat drop |
| 8. _____ | knee drop | 24. _____ | kaboom |
| 9. _____ | half twist to
front drop | 25. _____ | cody |
| 10. _____ | half twist to
back drop | 26. _____ | twisting sommersault
forward |
| 11. _____ | back drop to front
drop | 27. _____ | twisting sommersault
backward |
| 12. _____ | swivelhips | _____ | _____ |
| 13. _____ | full twist to seat
drop | _____ | _____ |
| 14. _____ | front dive to back
drop | _____ | _____ |

Trampoline continued

15. _____ half turntable _____

16. _____ back drop pullover _____

1. Name _____

2. School _____

Gymnastic duties at your school:

3. Do you teach gymnastics classes to physical education majors?

YES or NO (circle one)

4. Do you just coach a varsity team?

YES or NO (circle one)

THANK YOU FOR YOUR TIME AND CONSIDERATION!!!

Sample Follow Up Letter to Questionnaire

Date

Name
Address

Dear Coach:

Early in September I sent you a copy of the enclosed questionnaire for a thesis study that I am currently working on. At the present time I have not received a reply from you. I realize how busy you are now preparing for the new competitive season; however, I hope that you can find the time to complete this new questionnaire and return it to me at your earliest possible convenience. Enclosed please find a self-addressed, stamped envelope.

If you have already completed the original questionnaire and mailed it, please disregard this letter.

Sincerely,

Michael J. Ryan
Gymnastics Coach
Dickinson State College

APPENDIX C

Skill Descriptions and Point Values of Test Items

Floor exercise skills:

1. Forward roll: From a squatting position place the hands on the mat about shoulder width apart. Place the chin on the chest and lean forward, pushing with the feet and bending the arms. Allow the back of the shoulders to touch the mat first as the roll is executed and continue rolling on over the back. When the shoulders touch the mat, take the hands from the mat and grasp the shins, pulling the body into a tight tuck. Roll forward in this small ball up to the feet and then straighten to a standing position.

Tuck (chin on chest, body tightly closed)	1 point
Speed	1 point
Control	1 point
Form	2 points
	<hr/> 5 points total

2. Backward roll: Start from a squatting position with the hands on the mat and the knees between the arms. Lean forward slightly and then backward into the roll. Push with the hands, sit down, and start to roll onto the back. Place the hands above the shoulders with the fingers pointed back and the palms up. Keep the chin on the chest throughout the roll. Roll over the top of the head and onto the hands, keeping the knees tucked into the chest. Push with the hands and continue the roll to the feet.

Tuck (chin on chest, body tightly closed)	1 point
Speed	1 point
Control	1 point
Form	2 points
	<hr/> 5 points total

3. Backward extension: This is a variation of the backward roll, in which the performer momentarily passes through a handstand position and snaps the legs down to the floor. As the performer pushes with the hands, he fully extends the arms and shoots the feet upward to a handstand position, bend the knees slightly and snap the legs down from the waist. As the legs are snapped down, push with the hands so that the whole body will be completely off the mat.

Tuck and sit into back roll	1 point
Timing of the pop into the extension	1 point
Control	1 point
Form	2 points
	<hr/> 5 points total

4. Cartwheel: The cartwheel may be performed either to the left or to the right. It is described here to the left, but may be done

to the right by reversing the instruction. Start with the left side facing down towards the mat with the legs and the arms outstretched and apart as in the spokes of a wheel. Rock to the right side and then to the left. With this momentum established, bend to the left side at the waist and place the left hand on the mat about two feet to the side of the left foot. Force the right leg overhead and simultaneously push off the mat with the left leg. As the feet approach the handstand, place the right hand on the mat about shoulder width from the left hand. It is important here that the arms be kept straight and the head craned back so that the eyes are trained on a spot about 12 inches in front of, and between, the hands. At this point the body is in a handstand with the legs held straight and apart and the back slightly arched.

As the body passes through the handstand from the side, bring the right foot down on the line established by the left foot and hand, by bending to the right at the waist. The left foot will follow to the mat, and one finishes facing the same direction as at the start.

Body extended to handstand position	1 point
Proper head position	1 point
Legs straight	1 point
Control	1 point
Form	2 points
	<hr/>
	6 points total

5. Round off: The round off like the cartwheel can be performed to the left or to the right. Here it will be explained to the left. Take a good run, skip on the right foot, and bring the left foot forward. Place the left foot on the ground, bend forward at the waist and place the left hand on the mat about two feet in front of the left foot. Kick the right foot overhead followed by the left and place the right hand on the mat in front and slightly to the left of the left hand. As the stunt progresses, the hands and arms pivot in the same direction and the body turns. When the feet pass overhead, execute a half turn. Snap the feet down from the waist and simultaneously push off the mat by extending the shoulders and flexing the wrists. Land on both feet facing in the direction opposite from that of starting. When the feet strike the ground, bound off the balls of the feet.

Block (sudden change from forward to vertical height)	1 point
Extension of body	1 point
Body should be momentarily air-borne	1 point
Turning action	1 point
Control	1 point
Form (legs straight, toes pointed, etc.)	2 points
	<hr/>
	7 points total

6. Headspring: Take a slight run, hurdle and land on the mat with both feet at the same time. Place both hands on the mat with the top of

the head about six inches in front of the hands as though doing a headstand. Push the feet off the ground keeping the body in a piked position with the legs straight. The hips are carried over the head until the body weight falls off balance down the mat. Whip the legs overhead from the waist and on toward the mat in one continuous arc, simultaneously pushing with the hands. Land on the feet with the knees slightly bent.

Head position	1 point
Hips held high and in a pike	1 point
Explosiveness	1 point
Extension	1 point
Control	1 point
Body momentarily air-borne	1 point
Form	1 point
	<hr/>
	7 points total

7. Handspring: Take a good run, skip on the right foot, and bring the left foot forward. Place the left foot on the mat, bend forward at the waist, and place both hands about two feet ahead of the left foot. Kick the right foot overhead, followed by the left. As the feet are being carried overhead, the arms should be held straight and the eyes trained on a spot about six inches in front of the hands. As the body passes through the handstand position, push off the mat with the shoulders and wrists without bending the arms. Continue on over to the feet with the knees slightly flexed.

Block	1 point
Head position	1 point
Arms straight	1 point
Explosiveness	1 point
Extension	1 point
Body momentarily air-borne	1 point
Control	1 point
Form	2 points
	<hr/>
	9 points total

8. Hand Balance: This stunt consists simply of balancing oneself in an inverted position on the hands. The arms should be about shoulder width apart and the body should be as straight as possible.

Hand position	1 point
Head position	1 point
Body straight and legs together	1 point
Control (must be held three seconds)	1 point
Form	1 point
	<hr/>
	5 points total

9. Head Balance: This stunt consists of balancing on the head and hands with the feet straight overhead. Rest on the forehead. Remember to form a triangular formation with the head and hands

and keep the body straight.

Head position	1 point
Hand position	1 point
Body straight and legs together	1 point
Control	1 point
Form	1 point
	<hr/> 5 points total

Parallel bar skills:

1. Front support swing: From a straight arm support position, bring the legs up slightly and extend the body into an arched position. Swing the legs downward and then backward and forward in a series of swings.

Arch	1 point
Pike	1 point
Shoulders act as a fulcrum	1 point
Arms straight	1 point
Control	1 point
Form	1 point
	<hr/> 6 points total

2. Front support turn: From a straight arm support position, lean to the right and shift the left hand to the right bar, bringing the front of the thighs to rest on the bar. Keep the body straight and back slightly arched. Continue the turn by reaching back with the right hand and grasping the vacated bar, thus, ending in a straight arm support position.

Shifting of weight	1 point
Arms kept straight	1 point
Body kept straight	1 point
Form and control	1 point
	<hr/> 4 points total

3. Front dismount: From a front support swing as the body reaches the peak of the backward swing and the legs are above the bars, push hard with the left arm and swing the body over the right bar so the front part of the body is closest to the bar. Drop to the mat, grasping the bar with the left hand as the right hand releases the grip. Land on the mat with the left hand steadying the landing by holding onto the closest bar.

Swing	1 point
Height	1 point
Shifting of weight	1 point
Hand changes	1 point
Control	1 point
Landing	1 point
Form	1 point
	<hr/> 7 points total

4. Rear dismount from a front support swing: As the body swings forward and the feet reach a point above the bars, push with the left hand and swing the body over the right bar so the rear of the body is closest to the bar. After passing over the right bar, regrasp it with the left hand as the right hand lets go.

Swing	1 point
Height	1 point
Shifting of weight	1 point
Hand changes	1 point
Control	1 point
Landing	1 point
Form	1 point
	<u>7 points total</u>

5. Straddle travel: From a straddle seat position, lean forward and place the hands on the bars in front of the legs. As the weight is shifted to the straight arms, swing the legs backward above bar level; then bring them together and swing them forward between the bars. At the front of the swing, separate the legs again and place them in a straddle seat position in front of the hands. Travel the length of the bars in this manner.

Swinging action	1 point
Arms straight	1 point
Body straight	1 point
Shifting of weight	1 point
Form	2 points
	<u>6 points total</u>

6. Swinging dips: Swing in a straight arm support position, and when the feet are at the end of the backward swing, flex the arms and drop to a dip position. Remain in this dip position as the legs swing forward. Just as the feet reach the end of the swing, push the arms straight and finish in a straight arm position. This same stunt can be done backwards by reversing the directions.

Swinging action	1 point
Timing of the dip	1 point
Body kept straight	1 point
Strength control	2 points
Form	2 points
	<u>7 points total</u>

7. Single leg cut: Stand on the mats facing the end of the bars and grasp them with the hands. Jump toward a straight arm support position and as the body moves upward, separate the legs and pass the left leg outside the left hand. The left leg passes over the bar to the inside of the bars while the performer releases the left hand. After the leg has passed over the bar, regrasp the bar and finish in a straight arm position.

Timing of leg cut	1 point
Height of leg that clears the bar	1 point
Hand changes	2 points
Form	2 points
	<u>6 points total</u>

8. Forward roll to straddle sit: Start from a straddle seat position and grasp the bars in front of the thighs. Lean forward and place the upper arms on the bars with the elbows out to the side. Raise the hips, keeping the body in a pike position. As the hips pass over the head, release the hands, keeping the elbows out to the side, and grasp the hands behind the back. The roll is continued to a straddle sit position.

Shoulder position	1 point
Hips held high	1 point
Rotation	1 point
Control	1 point
Form	2 points
	<u>6 points total</u>

9. Backward roll to straddle sit: From a straddle seat position, lean backward onto the arms and execute a backward roll. Grasp the bars over the shoulders and continue to roll to a straddle sit.

Shoulder position	1 point
Hips held high	1 point
Rotation	1 point
Control	1 point
Form	2 points
	<u>6 points total</u>

10. Shoulder balance: Start from a straddle seat position and grasp the bars in front of the thighs. Lean forward and place the upper arms on the bars, with the elbows out to the sides. Raise the hips and extend the legs over the head. Assume the shoulder balance position with the back slightly arched, the head up and legs straight and toes pointed.

Arm position	1 point
Hips held high	1 point
Control of press	1 point
Hold three seconds	1 point
Form	3 points
	<u>7 points total</u>

11. Front uprise: From an upper arm support position, swing back and forth a couple of times. Toward the end of the forward swing, pull hard with the hands, thrust the hips forward, and lift the feet. Continue the pulling and pushing action, keep the hips and feet high and end in a straight arm support position.

Swinging action	1 point
Timing of uprise	1 point
Hips and feet held high	1 point
Arch-pike action	1 point
Follow through	1 point
Form	<u>3 points</u>
	8 points total

12. Back uprise: From an upper arm support position take a few swings. At the back of the swing pull hard with the hands and lift the hips upward. Continue the pull which brings the shoulders forward, and finish in a straight arm support position.

Swinging action	1 point
Timing of uprise	1 point
Hips held high	1 point
Follow through	1 point
Form	<u>4 points</u>
	8 points total

Horizontal bar skills:

1. Back dismount: From a front support position, swing the legs forward under the bar slightly and then swing them backwards and at the same time push with the hands and release the grip. Keep the body in a vertical position as you drop to the feet, and flex the knees slightly upon landing.

Hip action	1 point
Swing control	1 point
Push away	1 point
Form	<u>2 points</u>
	5 points total

2. Skin the cat: Using a regular grip, pull the legs up and between the arms and the bar. Continue the feet between the arms and on over as far as they will go into the skin the cat position. Keep knees close to the chest and return to the original position by pulling the legs back up between the arms and under the bar.

Strength	1 point
Control	1 point
Extension	1 point
Form	<u>1 point</u>
	4 points total

3. Single knee circle backward: From a single knee support position on top of the bar, swing the free leg backward and push the body up slightly away from the bar. Hook the back of the knee to the bar and continue the swing of the leg downward and under the bar. Lean backward with the head and shoulders throughout the circle,

and near the finish of the stunt, pull strongly with the arms to end on top of the bar again.

Arms kept straight	1 point
Legs kept straight	1 point
Speed	1 point
Completion of rotation	1 point
Form	2 points
	<u>6 points total</u>

4. Single knee circle forward: Same as the single leg circle backward but in the forward direction. Be sure the hands are in a reverse grip position. Push up and away from the bar at the beginning and lead with the head as the circle is attempted.

Arms kept straight	1 point
Legs kept straight	1 point
Speed	1 point
Completion of rotation	1 point
Hand grip	1 point
Form	1 point
	<u>6 points total</u>

5. Back hip circle: From a front support position, flex the hips and extend the legs backward away from the bar slightly. Then allow the legs to swing back toward the bar and as the abdomen strikes the bar, pike the body and continue the legs under and around to the other side. Pull with the arms and complete the circle of the body around the bar shifting the wrists to finish in a front support position.

Grip	1 point
Arch-pike action of the body	1 point
Completion of rotation	1 point
Arm pull	1 point
Form	2 points
	<u>6 points total</u>

6. Kip to support: From a swing on the bar toward the front end of the swing, arch the body. After reaching the front end of the swing, bring the feet up toward the bar. When the feet reach the bar and the hips are underneath it on the back swing, forcefully extend the legs upward and forward and pull hard with the arms. This action should bring the body upward and forward to a front support position on the bar.

Swing control	1 point
Hips held high	1 point
Arms kept straight	1 point
Timing of kip	2 points
Form	2 points
	<u>7 points total</u>

Still rings skills:

1. Chin-ups: Grasp the rings and simply pull up into a chin-up position.

Strength	2 points
Form	<u>1 point</u>
	3 points total

2. Pike hang: Grasp the rings and slowly draw the legs into an "L" position.

Strength	1 point
Form	<u>2 points</u>
	3 points total

3. Inverted hang: Grasp the rings and pull the body and legs up over the head into a layout inverted position. Hold.

Extension	1 point
Strength	1 point
Form	<u>1 point</u>
	3 points total

4. Bird's nest: Grasp the rings and pull the feet up and into the rings. Place the instep in the rings and arch the body so the chest is facing the mat. Hold.

Strength and flexibility	1 point
Form	<u>1 point</u>
	2 points total

5. Skin the cat: Grasp the rings and bring the legs up and between the arms and continue them over to an extended position with the toes reaching downward as far as possible toward the mat.

Strength and flexibility	1 point
Form	<u>1 point</u>
	2 points total

6. Straddle dismount: From a swing below the rings, bring the legs upward above the hands and into a straddle position. Pull hard with the arms and continue the motion upward and backward, releasing the hands and passing the legs outside the rings to finish in a standing position on the mat.

Swing control	1 point
Height	1 point
Wide straddle	1 point
Hips held high	1 point
Form	<u>3 points</u>
	7 points total

7. Dislocate: With the body in an inverted piked position, extend the legs up and backward and at the same time push the arms out to the side and arch the body. With the arms completely out to the sides and the body in an arched position, dislocate the shoulders and swing the feet on toward the mat.

Swing action	2 points
Hips high	2 points
Extension	2 points
Explosiveness	2 points
Smoothness of dislocation	1 point
Form	1 point
	<u>10 points total</u>

8. In-locate: From an inverted pike hang position, swing the legs forward, downward and backward. At the peak of the backward swing, turn the arms inward, drop the head forward, pike the body, and inlocate to an inverted hang position.

Swinging action	1 point
Extension	1 point
Explosiveness	2 points
Inlocate action	1 point
Hips held high	1 point
Form	2 points
	<u>8 points total</u>

9. Forward roll: From a straight arm support position above the rings, roll forward slowly into a pike position below the rings. Be sure to elevate the hips as the head is dropped forward prior to the roll. Lower the body slowly by keeping the arms flexed as the roll is completed.

Pike	1 point
Hips held high	1 point
Arms flexed	1 point
Form	1 point
	<u>4 points total</u>

10. Shoulder balance: From a straight arm position, bend forward, lifting the hips above the head and flexing the arms so that the shoulder balance can be reached. Keep the head up and slowly lift the feet upward to a straight shoulder balance position. Body should be held slightly arched, legs together, toes pointed.

Roll forward	1 point
Hips held high	1 point
Legs and body straight	1 point
Form	1 point
Hold for three seconds	2 points
	<u>6 points total</u>

Side horse skills:

1. Single leg $\frac{1}{2}$ circle: From a front rest position supporting the body with arms, hands on the pommels, and the front of the body leaning on the horse, swing the right leg over the end of the horse. While the right leg is swinging over the end of the horse, shift the weight of the body toward the left arm and release the right hand. Immediately after the leg has passed over the pommel, the right hand then regrasps the right pommel. Swing the right leg slightly to the left and then pass it backward over the pommel and the right end of the horse. Regrasp the right pommel with the right hand and finish up in the original starting position.

Swing action	1 point
Leg and hips held high	1 point
Hand changes	1 point
Timing	1 point
	<hr/>
	4 points total

2. Alternate leg circles: Start from a front support position and swing the right leg over the right end of the horse under the hand to a position between the pommels. Then swing the left leg over the left pommel under the hand to a position adjacent to the right leg between the pommels in a rear support position. When the left leg reaches the rear support position, then the right leg is immediately brought backward over the right end of the horse to its original position, and the left leg is swung back over the left end of the horse to its original position.

Swing action	1 point
Legs and hips held high	1 point
Hand changes	1 point
Timing	1 point
Form	2 points
	<hr/>
	6 points total

3. Single leg $\frac{1}{2}$ circle travel: From a front support position swing the left leg over the left end and under the left hand to a position between the pommels. Swing the right leg over the right end but do not cut it under the right hand. Instead, leave it on the right pommel so both legs are astride the right arm. Then swing the left leg back over the left end of the horse and shift the left hand to the right pommel. Now both hands are on the right pommel with the left hand in front of the right hand. When the left leg reaches the back side of the horse, swing the right leg back over the right end and shift the right hand to the end of the horse so the body is in a front support position supported with the left hand on the pommel and the right hand on the right end of the horse.

Swing action	1 point
Legs and hips held high	1 point
Hand changes	1 point
Shifting of weight	1 point
Timing	1 point
Form	1 point
	<u>6 points total</u>

4. Single leg rear dismount: From a right feint position the performer swings both legs over the left end of the horse in a position parallel to the horse. The legs continue over toward the mat and the performer lands on his feet.

Feint position	1 point
Swing action	1 point
Hips and legs held high	1 point
Shifting of weight	1 point
Hand changes	1 point
Form	1 point
	<u>6 points total</u>

Vaulting skills:

1. Front vault: After a fast run and take off, place the hands on the horse and turn towards the horse and lift the legs to the left, passing them over the top of the horse toward the other side. The front of the body should face the horse throughout the vault and an attempt should be made to force an arch in the body during the vault. As the body passes over the horse and starts toward the mat, drop the left hand, hold on with the right and proceed to land on the mats with the right side of the body closer to the horse.

Height	1 point
Hand position	1 point
Turning of the body	1 point
Form	2 points
Landing control	2 points
	<u>7 points total</u>

2. Flank vault: Upon taking off, extend the body to the left and pass over the horse with the flank side of the body closest to the horse. Land on the mat on the other side of the horse with the back toward the horse.

Height	1 point
Hand position	1 point
Turning of the body	1 point
Form	2 points
Control of landing	2 points
	<u>7 points total</u>

3. Rear vault: Upon taking off, reach for the horse with the hands and lift the legs to the left. Turn the body so that the back side passes over the horse in a sitting position. Release the left hand first and then the right in passing over the horse. After dropping with the right hand, grasp the pommel with the left hand to steady the landing on the far side of the horse.

Height	1 point
Hand position	1 point
Turning of the body	1 point
Form	2 points
Control of landing	2 points
	<hr/>
	7 points total

4. Squat stand leap: Upon taking off, bend the knees and land in a squat position with the hands on the horse. From this position leap forward by lifting the hands and shoulders and pushing off with the feet. Land in a standing position on the mats.

Approach to horse	1 point
Height	1 point
Control	1 point
Explosive leap off of horse	2 points
Form	2 points
	<hr/>
	7 points total

5. Squat vault: On the take-off, reach with the hands for the horse and push the body and hips upward, as the body passes over the horse with the knees in a squat position. Land on the other side of the horse at the completion of the vault.

Block	2 points
Height	2 points
Tight tuck	2 points
Form on landing	3 points
	<hr/>
	9 points total

6. Straddle vault: Same as the squat vault only the hips must be driven higher and the legs are kept straight and straddled when passing over the horse.

Block	2 points
Height	2 points
Wide straddle with good form	2 points
Form and control on landing	3 points
	<hr/>
	9 points total

Trampoline skills:

1. $\frac{1}{2}$ pirouette: Jump for height, reach the left hand up and across the face and look to the right. The body will respond to this

action by turning to the right. During the twist the body should be held in a vertical position. Land in a standing position.

Height and control	1 point
Form	1 point
	<u>2 points total</u>

2. One full pirouette: Same as half pirouette only complete a full turn.

Height	1 point
Control	1 point
Form	1 point
	<u>3 points total</u>

3. Tuck bounce: At the height of the bounce, draw the knees up to the chest and grasp the shins with the hands. Upon descending extend the legs.

Height	1 point
Tuck	1 point
Landing control and form	1 point
	<u>3 points total</u>

4. Pike bounce: Bounce straight up and while in the air, lift the legs so they are parallel to the bed. While in this position the hands should touch the ankles.

Height	1 point
Tight pike	1 point
Landing control and form	1 point
	<u>3 points total</u>

5. Seat drop: Jump for height and control and then land on the bed in a sitting position.

Height	1 point
Pike to sitting position	1 point
Landing control	1 point
Form	1 point
	<u>4 points total</u>

6. Front drop: Land on the bed in a prone position.

Height	1 point
Body extended	1 point
Landing control	1 point
Form	1 point
	<u>4 points total</u>

7. Back drop: Land on the bed in a supine position with the legs straight and vertically inclined.

Height	1 point
Body extended	1 point
Landing control	1 point
Form	1 point
	<u>4 points total</u>

8. Knee drop: Land on the bed in a kneeling position with the contact point being the knees, shins, and instep. Be sure to keep the weight of the body directly over the knees.

Height	1 point
Landing control	1 point
Form	2 points
	<u>4 points total</u>

9. One-half twist front drop: Start as if going into a back drop and on leaving the bed execute a half twist of the body by pulling one shoulder back and piking the body slightly. Look into the twist and when facing the bed, extend the legs and prepare for the front drop.

Height	1 point
Body extended	1 point
Twisting form	1 point
Landing control	1 point
Form	1 point
	<u>5 points total</u>

10. One-half twist back drop: Begin as if going for a front drop, just before contact throw the left arm across the body and look to the right. Land in a back drop position.

Height	1 point
Body extended	1 point
Twisting form	1 point
Landing control	1 point
Form	1 point
	<u>5 points total</u>

11. Back drop to front drop: From a back drop position kick the feet forward and upward vigorously and look forward with the head to cause rotation. Land in a front drop position.

Back drop control	2 points
Height	2 points
Explosiveness coming out of back drop	2 points
Front drop	2 points
Form	1 point
	<u>9 points total</u>

12. Swivel hips: Land in a sitting position, reach for height, extend body execute one-half twist, pike body and land in a sitting position.

Height	2 points
Seat drop	1 point
Height	2 points
Body extended one-half twist	2 points
Seat drop	1 point
Form	2 points
	<hr/>
	10 points total

13. One-half turntable: Front drop, pike body, execute one-half turn, front drop.

Height	2 points
Front drop control	2 points
Height and pike	2 points
Front drop	2 points
Form	2 points
	<hr/>
	10 points total

14. Back pull over: Land in a sitting position with the legs tucked. As the body rebounds, bring the knees into a tight tuck and throw the head backwards which will cause the body to rotate. Land in a standing position.

Height	1 point
Seat drop	1 point
Height	2 points
Tight tuck	1 point
Head throw and rotation	2 points
Landing control	2 points
Form	1 point
	<hr/>
	10 points total

15. Cradle: Land in a back drop position, extend the legs and hips upward and forward to a vertical position, execute one-half twist and land in a back drop position.

Height	2 points
Back drop	2 points
Extension and twist	2 points
Back drop	2 points
Form	2 points
	<hr/>
	10 points total

16. Front sommersault: Land on the feet, reach for height, bring body into a tight tuck and throw the head forward and down to cause rotation. Land in a standing position.

Reach for height	2 points
Tight tuck	2 points
Head throw for rotation	2 points
Landing control	2 points
Form	2 points
	<hr/> 10 points total

17. Backward sommersault: Land on the feet, reach for height, bring the body into a tight tuck, and throw the head backward to cause rotation. Land in a standing position.

Reach for height	2 points
Tight tuck	2 points
Head throw for rotation	2 points
Landing control	2 points
Form	2 points
	<hr/> 10 points total

Skill descriptions were taken from:

Newton C. Loken and Robert J. Willoughby, Complete Book of Gymnastics (Prentice-Hall Inc., Englewood Cliffs, N. J., 1967).

Point breakdown of skills:

Michael J. Ryan, Gymnastics Instructor, Dickinson State College.

APPENDIX D

TABLE 8

NORMS IN GYMNASTICS SKILLS FOR MALE PHYSICAL EDUCATION
MAJORS AT DICKINSON STATE COLLEGE IN 1969-1970

Standard Scores	Free Exercise	Parallel Bars	High Bar	Still Rings	Side Horse	Vaulting	Trampoline
100	0.	0.	0.	0.	0.	0.	0.
95	0.	0.	0.	0.	0.	0.	0.
90	0.	0.	34.	49.	0.	0.	0.
85	0.	0.	32.	47.	21.	0.	102.
80	51.	74.	31.	46.	20.	44.	98.
75	48.	70.	30.	44.	19.	42.	93.
70	46.	66.	28.	42.	18.	41.	89.
65	43.	61.	27.	40.	17.	39.	84.
60	40.	57.	26.	38.	16.	37.	79.
55	38.	53.	24.	36.	15.	35.	75.
50	35.	49.	23.	34.	15.	34.	70.
45	32.	45.	21.	32.	14.	32.	66.
40	29.	41.	20.	30.	13.	30.	61.
35	27.	37.	19.	28.	12.	29.	57.
30	24.	32.	17.	26.	11.	27.	52.
25	21.	28.	16.	24.	0.	25.	48.
20	19.	24.	15.	23.	0.	0.	43.
15	16.	20.	0.	0.	0.	0.	0.
10	0.	0.	0.	0.	0.	0.	0.
5	0.	0.	0.	0.	0.	0.	0.
0	0.	0.	0.	0.	0.	0.	0.
Mean	35.357	49.457	23.357	34.571	15.114	34.257	70.429
SD	6.740	10.350	3.414	4.790	2.116	4.276	11.303
N	70.000	70.000	70.000	70.000	70.000	70.000	70.000
H.S.	51.000	71.000	33.000	48.000	21.000	44.000	54.000
L.S.	18.000	24.000	16.000	24.000	12.000	26.000	45.000
Range	33.000	47.000	17.000	24.000	9.000	18.000	99.000
8 SC	0.539	0.828	0.273	0.383	0.169	0.342	0.904

From these norms the writer set the standard of minimum level of proficiency in gymnastics skills for male physical education majors at Dickinson State College at thirty (30) on the eight sigma scale of standard scores.

TABLE 9

NORMS IN GYMNASTICS SKILLS FOR MALE PHYSICAL EDUCATION MAJORS
AT DICKINSON STATE COLLEGE 1970-1971 TEST GROUP

Standard Scores	Free Exercise	Parallel Bars	High Bar	Still Rings	Side Horse	Long Horse Vaulting	Trampoline
100	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0
85	0	0	0	0	0	58	0
80	64	86	36	54	0	55	0
75	60	80	33	50	22	52	122
70	56	75	31	47	21	49	114
65	52	69	28	43	20	46	106
60	48	64	26	40	19	43	98
55	44	58	23	36	18	40	90
50	40	53	21	33	17	37	82
45	36	47	18	29	16	34	74
40	32	42	16	26	15	31	66
35	28	36	13	22	14	28	58
30	24	31	11	19	13	25	50
25	20	0	0	15	12	22	0
20	0	0	0	0	0	19	0
15	0	0	0	0	0	16	0
10	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
Mean	40.00	53.00	21.47	32.87	17.43	37.00	82.00
SD	7.746	11.3	5.47	7.329	2.646	5.568	15.8
N	23	23	23	23	23	23	23
H.S.	54	69	32	43	22	45	112
L.S.	26	31	13	16	12	18	54
Range	28	38	19	27	10	27	58

TABLE 10

NORMS IN GYMNASTICS SKILLS FOR MALE PHYSICAL EDUCATION MAJORS
AT DICKINSON STATE COLLEGE 1970-1971 GROUP (SECOND TESTING)

Standard Scores	Free Exercise	Parallel Bars	High Bar	Still Rings	Side Horse	Long Horse Vaulting	Trampoline
100	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0
80	0	87	38	55	21	0	0
75	60	81	35	51	20	51	119
70	56	75	33	48	19	48	111
65	52	69	30	44	18	45	103
60	48	63	28	41	17	42	95
55	44	57	25	37	16	39	87
50	40	51	23	34	15	36	79
45	36	45	20	30	14	33	71
40	32	39	18	26	13	30	63
35	28	33	15	22	12	27	55
30	24	27	13	19	11	24	47
25	20	21	10	15	10	21	39
20	0	0	0	0	0	18	0
15	0	0	0	0	0	15	0
10	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
Mean	39.68	51.21	22.95	34.34	15.43	36.00	79.00
SD	7.681	11.9	5.292	7.389	2.499	5.568	16.4
N	23	23	23	23	23	23	23
H.S.	52	71	33	45	20	41	110
L.S.	24	31	15	19	10	16	52
Range	28	40	18	26	10	25	58

APPENDIX E

List of coaches and institutions to whom questionnaires were sent

	<u>Institution and Location</u>	<u>Coach</u>	<u>Not</u>	
			<u>Returned</u>	<u>NR</u>
			<u>Returned</u>	<u>N</u>
1.	Central Washington State College, Ellensburg	Dennis Lazzar	R	
2.	Eastern Washington State College, Cheney	Jack Benson	R	
3.	University of California, San Diego	Howard F. Hunt		NR
4.	California Western University, San Diego	Robert Dinsberg		NR
5.	Sam Houston State College, Huntsville, Texas	John Burton	R	
6.	Eastern Montana College, Billings	Jay Shaw	R	
7.	Rocky Mountain College, Billings	Dorothy Patten	R	
8.	Eastern New Mexico University, Portales	Barry Schockmel		NR
9.	Ft. Lewis College, Durango, Colorado	Clint Ewald	R	
10.	Paul Quinn College, Waco, Texas	Bernard Boozer		NR
11.	Northwestern State College, Alva, Oklahoma	E. Johnson		NR
12.	Fort Hays State College, Hays, Kansas	Ed McNeil	R	
13.	Minot State College, Minot, North Dakota	Gary Leslie	R	
14.	Northern State College, Aberdeen, South Dakota	Bob Sorge	R	
15.	Bemidji State College, Bemidji, Minnesota	James Selby	R	
16.	Concordia College, Moorhead, Minnesota	Stew Bartholmaus	R	
17.	Lockhead University, Port Arthur, Ontario	K. Kangas	R	

<u>Institution and Location</u>	<u>Coach</u>	<u>Not Returned NR Returned R</u>
18. Gustavus Adolphus College, St. Peter, Minnesota	Dr. Lloyd Hollingsworth	R
19. St. Cloud State College, St. Cloud, Minnesota	Arlyan Anderson	R
20. Eau Claire State University, Eau Claire, Wisconsin	Bob Scott	R
21. LaCrosse State University, LaCrosse, Wisconsin	Jim Howard	R
22. Oshkosh State University, Oshkosh, Wisconsin	Ken Allen	R
23. Platteville State University, Platteville, Wisconsin	Ed Nolter	R
24. River Falls State University, River Falls, Wisconsin	Ron Bergerud	R
25. Stevens Point University, Stevens Point, Wisconsin	Bob Bowen	R
26. Stout State University, Menomonie, Wisconsin	John Zuerlein	R
27. Superior State University, Superior, Wisconsin	Bruce Fredrick	R
28. Whitewater State University, Whitewater, Wisconsin	Fred Roethlisberger	R
29. William Jewell College, Liberty, Missouri	Fred Flook	R
30. Frostburg State College, Frostburg, Maryland	Fred C. Sargent	R
31. Lock Haven State College, Lock Haven, Pennsylvania	L. P. Zimmerman	NR
32. Slippery Rock State College, Slippery Rock, Pennsylvania	Steve Banjak	R
33. Maryland State College, Princess Anne, Maryland	Melvin Evans	R
34. Eastern Illinois University, Charleston, Illinois	Dr. Robert Hussey	R

<u>Institution and Location</u>	<u>Coach</u>	<u>Not Returned NR Returned R</u>
35. George Williams College, Downers Grove, Illinois	George Falussy	NR
36. Lake Forest College, Lake Forest, Illinois	Al Henke	R
37. Western Illinois University, Macomb, Illinois	Robert Clow	R
38. Grace College, Winona Lake, Indiana	John Meyer	R
39. Eastern Michigan University, Ypsilanti, Michigan	Marv Johnson	R
40. David Lipscomb College, Nashville, Tennessee	Tom Hanvey	NR
41. Georgetown College, Georgetown, Kentucky	Jim Nance	NR
42. Georgia Southern College, Statesboro	Ron Oertley	NR
43. North Carolina College, Durham, North Carolina	George L. Quiett	NR
44. Athens College, Athens, Alabama	William Taylor	R
45. Jackson State College, Jackson, Mississippi	A. F. Smith	R
46. West Virginia Wesleyan, Buckhannon	Sam Ross	R
47. Pembroke State College, Pembroke, North Carolina	Kenneth Johnson	R
48. St. Andrews Presbyterian College, Laurinburg, North Carolina	Jerome McGee	R
49. Grambling College, Grambling, Louisiana	Virden Evans	R
50. Northeast Louisiana State, Monroe	Tom Boone	NR
51. Southern University, Baton Rouge, Louisiana	Richard Hill	NR
52. Southwestern Louisiana University, Lafayette, Louisiana	Jeff Hennessey	R

<u>Institutions and Location</u>	<u>Coach</u>	<u>Not Returned NR Returned R</u>
53. Montclair State College, Upper Montclair, New Jersey	Terry Orlick	R
54. Plattsburgh State University, Plattsburgh, New York	E. F. Beyer	R
55. Trenton State College, Trenton, New Jersey	Donald Williams	R
56. Boston State College, Boston, Massachusetts	Joe Dorsey	NR
57. Northwestern State College, Natchitoches, Louisiana	Armando, Vega	R
58. Eastern New Mexico University, Portales, New Mexico	Don Robinson	NR

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