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STRAUSBERGER, JANET G. Women's Basketball Rule Infringements in Seasonal and National Tournament Play. (1972) Directed by: Dr. Pearl Berlin. Pp. 82.

The purpose of the study was to investigate the types and frequency of basketball rule infringements that occurred at the college level during the 1971-72 competitive season and the First DGWS National Intercollegiate Basketball Championship. A checklist was prepared to record and identify rule infringements as they occurred during the game.

One hundred ten games from eighteen colleges and universities were charted throughout their 1971-72 season. Statisticians from these colleges recorded all rule infringements called by nationally rated officials during the games. Ten games at the First DGWS National Intercollegiate Basketball Championship were also charted making a total of 103 teams participating in the study.

The data were analyzed as to frequency of basketball rule infringements occurring during regular season and national tournament play in relation to quarters and point spread. During regular season play, there was an average of 9.31 violations and 8.01 fouls occurring per quarter, yielding a mean of 69.29 infringements called during an entire game. During the First DGWS National Intercollegiate Basketball Championship means of 5.38 violations and 7.90 fouls occurred per quarter averaging 53.10 infringements occurring during an entire game.

A significant difference was found between the violations in regular season and national tournament play. In this study,

there was little difference found in frequency of infringements during different quarters or under conditions of different point spreads--greater or less than six.

From the study there appeared to be a need for better use of communication techniques by officials and more standardization of rule interpretations. Clearly, the study pointed out that the overall quality of officiating was not equivalent although all officials participating in the study held national ratings. The implications here are for improved methods of training officials.

James G. Straubinger

A Thesis Submitted to
The Faculty of the Graduate School at
The University of North Carolina at Greensboro
In Partial Fulfillment
of the Requirements for the Degree
Master of Science in Physical Education

Greensboro

1972

Approved by


Thesis Advisor

WOMEN'S BASKETBALL RULE INFRINGEMENTS

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IN SEASONAL AND NATIONAL

TOURNAMENT PLAY

by

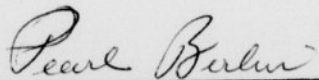
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CHAPTER I

INTRODUCTION

Through the years, changes in girls' and women's basketball rules have affected the pattern and quality of play. In 1971, the five-player basketball game was officially adopted by the Division for Girls and Women's Sports,* adding a new era to women's basketball. The effects and influences of these rules open a new area for investigation.

It was three years ago when Scott (1968:16) stated that:

For the past few years many persons have urged the development of opportunities for the highly skilled girl in athletics. Speeches have been given and articles written, all dealing with the importance of this aspect of women's sports. The Division for Girls and Women's Sports has issued a clarification of philosophy which encourages the highly skilled;

Obviously, the adoption of the five-player game was consistent with DGWS efforts to provide more challenging competitive experiences for skilled girls and women. Other steps to increase competition as enumerated by Scott (1968) included: (1) a DGWS Study Conference on Competition for Girls and Women in 1965 to set guidelines for interscholastic and intercollegiate competition for girls and women, (2) efforts by consultants to further high school girls' sports at the state level, and (3) formation

*Hereafter referred to as DGWS.

of the Association for Intercollegiate Athletics for Women (AIAW) to organize and direct intercollegiate athletics for women.

As competitive sport opportunities for girls and women have developed more fully, it seems appropriate to assess the effects of such expansion on the quality of play. Data derived from actual game situations have the potential to yield some insights into numerous factors related to players' performances and officials' contributions to the nature of the contest.

Statement of the Problem

This research investigated the types and frequency of basketball rule infringements occurring during the 1971-72 regular intercollegiate season and the First DGWS National Intercollegiate Basketball Championship. Specifically, it sought to answer the following questions:

1. What types and frequency of basketball rule infringements occur during regular season intercollegiate games and national tournament games?
2. How does the game score relate to rule infringements? Are there differences in frequency of violations and fouls when the point spread is greater or less than six?
3. Is there a pattern of occurrence of rule infringements in relation to quarters of the game?

This study was also concerned with suggestions from the data for improving the quality of play and the processes related to officiating.

Definition of Terms

For interpretation in this study the following definitions are assigned to terms:

1. Basketball - the game played using the DGWS five-player basketball rules for 1971-72.

2. College level - first and second women's intercollegiate basketball teams representing a recognized institution of higher education and participating in a regular scheduled competitive season.

3. Regular season play - selected games during the 1971-72 intercollegiate basketball season.

4. National tournament play - selected games at the First DGWS National Intercollegiate Basketball Championship, 1972.

5. Trained statistician - an individual who was a basketball player, official, or official-in-training who recorded rule infringements which became the data for this study.

Assumptions

Underlying this investigation were certain assumptions. First, it was accepted that there was a high standard of officiating when games were called by nationally rated officials. It was also assumed there was a relationship between quality of play and the types and frequency of basketball rule infringements in the game situation. Finally, it was acknowledged that the accuracy of statisticians' observations and effective recording was fundamental to the research. Statisticians involved in

the data collection, individuals selected on the basis of their basketball experience - players, officials, or officials-in-training were assumed to have observed with precision and recorded game data competently.

Scope of the Study

The study was based on selected intercollegiate basketball games played during the 1971-72 season. Rule infringements occurring during games of eighteen colleges and universities throughout the Midwest and Southeast were systematically recorded throughout their seasons. Also, selected games at the First DGWS National Intercollegiate Basketball Championship were observed and recorded. Ten teams from various areas of the country participated in these games. A total of 103 teams took part in the complete study. Data were generated from rule infringements called by nationally rated officials during the games. Trained statisticians recorded the calls on a checklist prepared by the investigator.

Significance of the Study

As girls' and women's competitive programs of basketball increase, the effects of expanded and more intense programs warrant consideration. Data derived from actual game situations provide information that gives students of the game a more precise view of their actions, particularly in relation to rule infringements.

Moyer (1968b:3) stated, "The demand for women officials is being increased with the advent of more interscholastic and

intercollegiate competition for women." The DGWS (1965:36) recommended: ". . . an official's rating be considered a prerequisite for coaching in order to enhance the coach's understanding of the official's role." As McIntyre (1972) reported, officiating is a requirement for obtaining a coaching certificate for the public schools in Minnesota. The Illinois High School Association will require by 1973-74 that only women holding current DGWS-OSA ratings of a specified level may officiate girls' sports contests. To meet the growing demand for women officials the development of more effective and efficient officiating courses are necessary. Hopefully, this study will provide implications for teaching and training officials.

CHAPTER II

REVIEW OF LITERATURE

The literature reviewed as part of this study verified the fact that there has been a considerable increase in competitive sport opportunities for girls and women. Because the first year the five-player basketball game was officially adopted by the DGWS was 1971, there was, however, limited material on the officiating and playing of women's five-player basketball per se. To some degree, though, officiating concepts and procedures now in use are the same or similar to those utilized prior to the rule changes. Materials discussed in this chapter, therefore, pre-date this major rule change.

Officiating

The continually increasing opportunities for participation in girls' and women's sports causes an increasing need for qualified women officials. This increase in competitive experiences Barron (1971) feels is due to a changing attitude toward the active participation of girls in the secondary school sports programs. More opportunities for girls are being made available to participate in intramurals, extramurals, and interscholastic sports. As long as sixteen years ago, in a study by McGee (1956) on attitudes toward intensive competition for girls, it was found that coaches and parents had a more favorable attitude than

administrators and teachers toward intensive competition for girls. As Alderson (1963) mentioned, interscholastic athletic programs have become an integral part of the total school curriculum which now indicates an administrative change in attitude.

Regardless of the organizing body, whether it be the school or recreation department, the most important purpose of sports for girls and women, as both Alderson (1963) and Witham (1957) emphasize, is the value that accrues to the participant. Alderson (1963) emphasizes that the interest and values derived by coaches, officials, spectators, and community should be incidental by-products of the program. Alderson (1963:40) asserted,

We Americans pride ourselves on being good sports, but realistic analysis will reveal that our sense of values and attitudes toward school programs of competitive athletics are frequently illogical and often reprehensible. We should correct this unhealthy attitude and paradoxical condition before it undermines our school sports program.

Roles of officials. The official plays an important role in the conduct of the competitive sports program. According to Wyrick (1966), educators who officiate see the official as a teacher, a leader, a public relations ambassador, and a person who reflects the ideals, attitudes, policies, beliefs, and standards of an institution or association. An official is as vital a part of the game as the coach and players. Many people believe that a team is as good as its coach but that a game is as good as the officials. The character of the sport can be no better than that of its officials and the contribution of

competition to the development of good sportsmanship is based on the competence and integrity of the officials.

Aitken (1963) suggested that the more opportunities for teachers and students in physical education to receive training in officiating from trained officials, the greater asset they would be to the promotion of desirable sports programs for girls and women.

There is an increasing need for qualified women officials. Studies by Seymore (1955) and Binnion (1961) both indicated a shortage of women basketball officials. In 1960, Binnion (1961) conducted a national survey to ascertain the attitude and incidence of women officials in girls' and women's sports. She found that school administrators, coaches, and players were overwhelmingly in favor of women officials and that women are handling their own officiating in nearly every sport except basketball and softball.

Barnes (1968) and Ford (1971) pointed out that because of the hundreds of thousands of basketball games played per year, the great demand for competent officials far surpasses both the supply and the ability of officiating boards to develop and evaluate officials under the present procedures. The Officiating Services Area (OSA) is aware of the shortage of women officials and is striving to increase the number of rated officials throughout the country.

Barnes (1968) states that authorities agree students are the greatest potential source of officials. Ford (1971:64)

suggested, "High school physical education teachers should consider using the Intramural rating as a teaching technique." Barnes (1968) also suggests a need to organize officials' clubs at the high school level. At the college level, Ford (1971:64) stated that, ". . . OSA recommends the addition of an officiating course as part of a physical education major's professional preparation." It has been suggested by Barnes (1968) that universities publicize officiating courses in order to attract the enrollment of students other than those majoring in physical education.

Clark (1966:45) reaffirmed Ford's suggestions and stated that,

If training programs were begun in more high schools perhaps more women could and would take their rightful place in officiating city league, interscholastic, intercollegiate, and other types of competitive basketball games.

If girls' and women's sports programs are to be expanded successfully and also maintain high standards, then women must be willing to accept the leadership responsibilities of administering, coaching, and officiating girls' and women's sports. The DGWS (1969b) strongly believes the girls' sports program should be directed, coached, and officiated by qualified women whenever and wherever possible. The use of men officials is acceptable under exceptional circumstances, provided they meet the qualifications set for proper officiating of girls' and women's sports. Men often interpret rules and the spirit of the rules differently than women. Barnes (1968) claimed the differences

in interpreting blocking and charging is one of the handicaps to men when officiating women's games.

If women are to provide the officiating for girls' and women's sports, then, as Witham (1957) stated, it is the responsibility of physical education teachers to emphasize the value of women officials and to influence administrators of their schools to accept the sound philosophy of women officials for girls' sports.

Koenig (1964:28) firmly stated,

No one accepting DGWS standards would deny that a competitive program should be conducted by qualified leaders, and few would argue with the statement that qualified women can best coach and officiate girls and women's sport.

Qualities of officials. Any investigation of officials is concerned, in part, with the characteristics associated with good officials. Numerous qualities identified with effective officials have been enumerated in speeches, articles, and books by Koenig (1969a), Schaafsma (1969a), Bunn (1950), Becker (1961), Cowan (1958), and the American Association for Health, Physical Education, and Recreation (1961) as follows:

1. A thorough knowledge of the rules, the relationship of one rule to another and a knowledge of the reasoning behind the rules and the changes in the rules are necessary (Koenig 1969a, Bunn 1950, Cowan 1958).
2. The most vital attribute of a good official is consistency within a game and flexibility between games. There is a difference in how one type of game is called compared to another at a

a different level of play. (Koenig 1969a; Schaafsma 1969a, Bunn 1950, Cowan 1958, Koenig 1969b, Barnes 1968).

Barnes (1968) contended that adjusting calls to the level of play is challenging and often difficult for both beginning and experienced officials. Though theoretically basketball is a noncontact sport, personal contact is bound to result with players moving rapidly in a limited space. The intent of the rules concerning fouls should be considered. The personal contact that results from rapidly moving players should not be penalized unless roughness has occurred. Games should be more closely called at a lower level of play because speed of movement is not a factor. Somewhat more contact may occur as the level of play improves. The important factor is the speed with which players are moving up and down the court.

Koenig (1969b:58) asserted,

There is a difference in how various games are called and that stems from variations in the interpretation of a rule at various skill levels or in differing situations. . . . Basketball rules are. . . general and designed to cover a variety of situations. The official must know the intent of the rule and be ready to interpret it in a given situation. A basketball player wants to enjoy the contest, wants to move as smoothly as possible with a minimum of interruption, and wants to be able to use her skill without being unfairly hampered by an opponent. Rules are made to allow for this; the official's interpretation of the rules will insure it.

In agreement with the above, the author believes if the game becomes one of physical strength instead of one of coordination and skill, then many of the values of the game are lost.

Another point made in regard to this issue by Barnes (1968:79-80) is that:

Although there is more contact as skill and speed improve, let us never forget that roughness should not be tolerated. In boys and men's games one can easily observe the progressive laxity in calling fouls. . . . We must learn a lesson from men's play and refuse to condone roughness under any circumstances. As women officials, let us be completely intolerant of rough play and penalize violators scrupulously. Men have been forced to experiment with an additional official. Let us hope that we never need a third one, on the court or in the stands. If it takes three officials to govern the action of twelve players, perhaps the game is not worth playing.

3. Quick reaction time and instinctive decisions are necessary (Koenig 1969a, Bunn 1950, Becker 1961, Schaafsma 1969a). Koenig (1969a:55) stated, "The top-notch official must be able to make a call while the player is in the act of breaking a rule, so that the girl is more conscious of her mistakes and will be able to make corrections."

4. A good official is always alert, looks alert by her appearance and is in good physical condition so she is able to cover the court effectively (Koenig 1969a, Bunn 1950, Schaafsma 1969a). Koenig (1969a:55) indicates that by being alert,

A good official is aware of the total situation and sees the first foul instead of the reacting push of the second player; she does not have to wait for a minor battle to start before becoming aware of a conflict between two players.

5. Knowledge of the game is a great asset (Koenig 1969a, Schaafsma 1969a, Becker 1961). Koenig (1969a:55-56) emphasizes, "Attending coaching workshops and clinics is important for officials to do. Having a thorough knowledge of the game enables the official

to know what to expect when." Knowledge of the situations where fouls are likely to occur as proposed by Becker (1961) is attained from playing experience or from watching the strategy used in certain situations in many games.

6. A good official is calm (Koenig 1969a, Bunn 1950). Reacting with understanding rather than impulsively, Koenig (1969a) suggested is often the better way. A look or a word or two can be much more effective to a player when she has a momentary loss of composure than removing her from the game unless it was a deliberate unsportsmanlike act. Sometimes the official can calm down the play by pausing longer than necessary to give direction on a freethrow or jump ball.

7. Objectivity is important. Koenig (1969a) stated that a good official is never oversensitive, intimidated, or swayed by comments or actions of players, coaches, or fans. She does not let such remarks interfere with her concentration on the play on the court.

Schaafsma (1969a:59) reiterated,

The official does much to set the atmosphere which surrounds the competition. The atmosphere which issues is, in a large measure, dependent upon the official's attitude regarding the contest. In conjunction with setting a cooperative atmosphere, the official who gains the confidence of players in her ability to call the game has increased the chances that she will gain the confidence of the audience.

8. It is important to be friendly and polite; but one must also be impersonal in order to keep desirable official-player rapport. Also a sense of humor is helpful at times during a game (Koenig 1969a, Bunn 1950).

9. The top official does not attempt to put her own philosophy of basketball playing into calling the game (Koenig 1969a).

10. An official never instructs a team to "play clean" because she would be inferring that she expected them to try and break the rules (Koenig 1969a).

11. A good official must be willing to listen and answer questions of coaches if the request is made at the proper time and in the proper manner. This type of cooperation leads to good public relations (Koenig 1969a, Bunn 1950). The American Association for Health, Physical Education, and Recreation (1961) reaffirms, in a published 1961 pamphlet, that questions asked at the correct time and in the right manner deserve an intelligent and polite answer. The official must maintain her dignity and composure at all times. An official's attitude toward questions, criticisms, and difficult situations will determine her personal success as an official. Certain situations require great tact and diplomacy. Out of each experience, greater knowledge and understanding must come and such knowledge and understanding leads to better officiating

12. The top official has confidence in herself and is not afraid to correct a mistake such as having called the wrong number or calling the wrong color out-of-bounds (Koenig 1969a, Bunn 1950, Cowan 1958).

13. A good official never covers up mistakes by blaming the other official. The less said about another official to a coach

or a player the better. Two officials work together and cooperate with each other (Koenig 1969a).

14. An official who wishes to achieve excellence must work constantly on proper and effective techniques. She must be able to communicate with the players, scorers, and spectators without being theatrical (Koenig 1969a, Bunn 1950, Schaafsma 1969a).

15. A strong, clear, resonant voice that carries is needed, but not a blasting or accusing one (Koenig 1969a, Becker 1961).

16. A top official should be cognizant of special tournament regulations and also of possible problems which may arise and be able to handle them (Koenig 1969a, Cowan 1958).

17. A good official possesses what Bunn (1950:3) called potential of presence: "The official who through the influence of his presence causes players to avoid rule violations has obtained the perfect relationship to the game."

Koenig (1969a:57) summarized,

The top official is decisive, objective, and fair. She is consistent in her calling of a game. She is flexible and adaptable, cooperating with and complimenting the other official. She is tactful, calm, and polite under the most adverse conditions. Welcoming opportunities to discuss the game and techniques, she is willing to exchange ideas with other men and women who officiate. She is realistic and not hypertechical; she feels free to depart from a literal interpretation of the 'Technique of Officiating Basketball' article if to do so will result in better game coverage.

Methods of training officials. The shortage of qualified women officials has long been recognized but it is more difficult to alter than to identify (Witham 1957). Schaafsma (1969b:65) asserted, "An all-out effort is needed to confront those persons

who are expanding sports programs with their responsibility to contribute toward the recruitment and training of officials."

The DGWS is working towards the goal of training more women officials. Across the nation, officiating boards are trying to meet the local officiating needs of their areas. Some of the methods utilized to generate more interest and provide more opportunities for training officials are: (1) to start training officials at the high school level where the physical education teacher has a unique opportunity to introduce officiating through experiences in physical education classes, and (2) to form an official's or leader's club. Colleges also need to encourage and train students to become qualified officials through courses in officiating, official's clubs, and clinics (Barron 1971, Witham 1957).

Other methods Barron (1971) suggested were that adult education programs could offer women's basketball officiating courses. Inservice training programs would also offer a way to obtain officials for girls' sports. Witham (1957) added that community groups like the YWCA or recreation department in cooperation with high school or local officiating board may organize a training program for officials.

More intelligent publicity through local newspapers is needed to make the community aware of the need and to reach girls and women who might desire the opportunity to become a rated official (Barron 1971, Witham 1957).

According to a report by Hallmark (1965), the Baltimore Officiating Board, in trying to meet the need for officials,

organized a school for officials which allowed all interested persons of varying ages and experiences to be trained step by step. A committee of officials developed progressive lesson plans for four stations of learning on four consecutive Saturdays. During the fourth lesson, the written examination was given. Two rating clinics were held following the completion of the training clinics to encourage new ratings especially the Associate rating. The program was designed to reach the young sports-minded teenager and the forgotten high school graduate with hidden potential.

Another resource for officials, Schaafsma (1969b) pointed out, is basketball players. These girls, with their knowledge of the game, have the potential to become outstanding officials and should be encouraged to learn to officiate so that they may contribute to their sport when their days of competition are over.

It is sometimes debated whether or not good officials are born or made. Many instructors believe that some people have a natural talent for making the right call in a confident, pleasant manner while others find even learning to blow a whistle to be a difficult task. Regardless of backgrounds, DGWS (1969a) takes the position that all students are capable of improving in their goal toward becoming basketball officials. Schurr and Philipp (1971) studied this particular issue. In working with nationally rated women officials, they concluded that the characteristics

distinguishing the official from the general female population were not hereditary and, therefore, can be learned. Officiating courses should be planned to provide an environment for the development of these characteristics. Opportunities should be created in which student officials can assume positive leadership roles, which will help the official gain confidence. Schurr (1971:72) stated,

Officiating experiences should be varied and plentiful. Most officials need many practice games under a variety of conditions to learn to adjust to individual situations. From an amiable beginning with a supportive, encouraging situation, the apprentice official should practice on faster, more competitive games.

The training of officials takes time for many concepts and techniques must be learned and practiced. Schaafsma (1969b:65) stated,

The beginning official should develop a proper perspective and be aware of the amount of work and experience required to become a top-quality official. Officials in training should be encouraged to gain as much experience as possible at beginning and intermediate levels of play, and be reminded to have patience.

Beginning officials must work on gaining a thorough knowledge of the rules. These can be learned through extensive rule discussions, question and answer sessions, posed situations and, if possible, group observation of games or films of games accompanied by analysis of fouls and violations and decisions (DGWS 1969a, Moyer 1968b, Schaafsma 1969b, Schurr 1971).

Moyer (1968b) stated that probably the most difficult problems are: teaching students to recognize infringements, and to have sufficient self-confidence to stop the play and

announce the decision. Demonstrations can assist in learning to recognize rule infringements (DGWS 1969a, Moyer 1968b).

Observation of good officiating and criticism of it are other methods used in training officials. By watching two nationally rated officials in action, the beginning official can establish individual goals concerning techniques, philosophy, and knowledge of the rules (DGWS 1969a, Schaafsma 1969b).

One method advocated in teaching officiating techniques is through preplanned game situations and role playing. The players are given instructions by the teacher as to the situation they are to produce. The two officials assume their position and make the correct decisions on the play. After each decision is made, the teacher and class discuss and evaluate the situation and techniques employed by the officials. Students rotate duties as players and officials (Cowan 1958, Sanford, 1953, Witte 1959). One criticism of this method was offered by Gordon (1972) who commented that often the role playing technique used with students, who do not have a high level of skill, becomes unnatural. In other words, situations do not occur as they would in a real game setting. The student often concentrates on committing the infringement instead of developing the play in which the infringement is more likely to occur. The use of a demonstration of the infringements and pointing them out in a real game may be more beneficial than the role playing technique.

A breakdown of the elements of the game and the proper techniques used should be emphasized and practiced constantly,

i.e., whistle blowing, signaling, combining signals with verbalization of calls, moving with the ball on the court relative to angles of vision, administering free throws, jump balls, out-of-bounds plays (Schaafsma 1969b).

Basic to the training of officials is the need for extensive practice which is essential to achieve fast and accurate reactions in game situations and to gain self-confidence. Supervision of the student's officiating is necessary to make the practice a meaningful experience. It is often helpful for the beginning official to work with an experienced official, and then for the student to gradually take over more of the responsibility. Independent practice with criticism and suggestions from classmates or trained observers can be beneficial to both the official and observer. Independent practice with self-criticism is also a helpful method (DGWS 1969a, Schaafsma 1969b).

The DGWS (1969a) proposed that throughout the training of a student official, she should be encouraged to obtain additional playing experience to help improve her understanding of the game itself. She should also learn to cooperate with the other official and be able to work together as a team. Another objective of the student official while in training is to develop a desirable philosophy of officiating. Finally, all officials should be encouraged to work toward higher ratings.

Following the training and practice is the rating of officials. Clark (1966:) declared,

Before attempting the practical test, the confidence of the girls must be developed by allowing adequate opportunity to officiate under supervision. Many hours must

be spent conditioning their responses to become automatic in a given situation.

Clark (1966) went on to state that the practical test often frightens students since they are competing with adults rather than their peers. If an instructor does not feel a student is ready, the student should not take the practical rating test just for the experience for this experience could be more harmful than helpful.

Once rated, an official must be encouraged to officiate. A new official should gain satisfaction in her officiating. To do this, Schaafsma (1969b:65) stated the new official must be:

. . . (1) accurately rated and assigned to contests within her capabilities; (2) given enough assignments to warrant her continued interest; (3) properly treated by agencies serviced, so that a public relations effort between rating boards and groups serviced is essential; and (4) given encouragement, support, and help from more experienced officials whenever possible.

Not only is the caliber of the game enhanced when qualified officials are used, students who train as officials also receive benefits from the training itself. Hawthorn (1971) indicated that the values of an officiating class are many and varied. A college officiating class is highly suitable because of the availability of qualified people, facilities, and players for game situations. Officiating may interest girls who enjoy certain sports but who did not realize the challenge and enjoyment of officiating. A rated official is more capable of taking an active part in high school interscholastic programs when she goes out to teach. Students are provided with a greater

understanding and appreciation of sports and the values of competition and sportsmanship. Through officiating class, students study a sport from a different viewpoint and gain greater insight into the sport. Students who are interested in coaching need to understand the rules and their intent. Officials should be trained to conduct the game for the benefit of the players.

Hawthorn (1971:73) stated,

Officiating class can aid in students' personal development. Learning self-control, self-confidence, fair play, sportsmanship, and the concept of serving others is a personal challenge. More than that, becoming a rated official can be a victory to oneself. It means conquering the fears that go with performing before others. It means accepting the responsibility that makes players dependent upon your decisions and judgement. It means being able to pass a thorough and exacting written examination and then an equally thorough practical one. It means hard work, and work of this nature promotes maturity.

Magnuson (1963) added,

In addition to the personal satisfactions, students will find that it helps them to better understand the total game, to improve their own play, and to appreciate the role of the official. With the help of the teacher in interpreting rules and learning officiating techniques, the student can begin to put knowledge into practice.

Clark (1966) stated that through officiating, the student develops confidences, concentration, cooperation, judgment, leadership, and sportsmanship. Although training officials requires time and effort, it is as important to basketball as teaching proper playing techniques.

The DGWS (1969a) asserted that students who have obtained ratings aid instruction and also raise the caliber of games in

physical education classes and in intramurals. By encouraging students to become rated officials, physical educators can help add to the supply of rated officials needed to officiate the ever increasing amount of competitive events in girls and women's sports.

Schaafsma (1969b) emphasized that the future of sound programs for girls and women's sports depends upon the quality of the officiating. The training of future officials must be a concern to all interested in the future of the sport.

Quality of Play

The desire to play and improve one's skill are important attributes for a player to possess. Cox (1969:13) asserted,

It isn't enough to be good if you have the ability to be better. It isn't enough to be very good if you have the ability to be great. . . . The important thing is to play to the absolute peak of your capabilities. It isn't a question of what you are contributing, as much as what you can contribute. You must want to prove to yourself that you can perhaps get more out of your abilities.

Moyer (1968a) pointed out that the team must be able to maneuver and think as one, and within this team individuals must be ready to adapt to situations which arise during play. She went on to state that the individual qualities every good player must possess are quick reaction time, desire, sport intelligence or "game sense," and emotional control. A girl who genuinely wants to work and has some skill is likely to be more of an asset to a team than one who is satisfied with her present performance and is not eager to work.

Sportsmanship is one quality which competitors must possess or acquire. Moyer (1968a) emphasized sportsmanship as one quality which all competitors must possess or acquire. Good sportsmanship can make a contest fun for the participants and enjoyable for the spectators. Sportsmanship is the ability to win humbly and lose graciously; to accept criticism; to control one's emotions, whether upset with oneself, with a teammate, with an opponent, or with an official; praise others on a job well done; and have self-respect and pride. Sportsmanship is shown through consideration for one's team as well as for one's opponents. The American Association for Health, Physical Education, and Recreation (1961) stated that a good player and a good team have good sportsmanship. A player should be quick to render a helping hand to an injured opponent, accept the officials decision with politeness whether she agrees or disagrees, shake hands with opponents before and after the game and congratulate them on their performance. Some of the finest personal relationships have been developed between opposing athletes from personal contacts made on the court.

The skill level of the players is a basic factor in determining the quality of play. Isenberger (1957) stated that inability to handle the body efficiently is one of the most prevalent problems among basketball players. The skills of running, starting, stopping, changing direction, sliding, and jumping all emphasize body control. The more efficient and better body control demonstrated in these skills, the higher the quality of play. Barnes (1961) emphasized the following as advanced playing qualities: body control,

ball-handling skills, speed, a change of pace stamina, aggressiveness, and anticipation. A skilled player as defined by Corcoran (1968) is experienced in basketball and has the ability to change direction readily, move down court quickly, move the ball rapidly, jump efficiently, and work patterns of play effectively. A player who is generally referred to as "unskilled" usually has little experience in playing, is slow in executing the above mentioned skills, often watches the ball on the dribble, lacks agility, and is unable to control her body weight adequately.

Advanced players are able to utilize offensive concepts. They also know what types of offense to use against different defenses. They are poised and confident, never letting a pressure defense be upsetting. They look for the fast break opportunity and effectively using a pivot player. Defensive concepts that advanced players possess are: (1) recognizing what type of defense to use against various offenses to best stop that offense; (2) using a team effort to stop the pass to the pivot player; (3) knowing the advantages of double teaming and how to effectively use it; and (4) knowing the principles of when and how to use a switching player-to-player defense and a press defense (Bell 1964, Neal 1966).

If two teams have approximately equal offensive abilities, the team which can force its opponents to commit the greater number of turnovers should, theoretically, win more games. Besides regaining possession of the ball, a foul frequently follows a turnover, because the player who has lost the ball is too anxious to recover it (Walker 1969).

Corcoran (1968) listed some of the problems, fouls, and violations which are characteristic of lower and higher skill levels. For skilled players: (1) the official must adapt her jump ball toss to the greater jumping ability of the players; (2) the official must move quickly to get out of the way of a play; (3) skilled players sometimes push or hip opponents while waiting outside the circle of a jump ball; (4) some players tag or hold opponents; (5) while attempting to rebound some players throw hips and elbows; (6) as substitutes, they enter the game on the timer's horn rather than on the official's signal to enter; (7) an attempt to delay the game may occur particularly in the fourth quarter of a close game; (8) palming the ball may occur when changing directions (9) shuffling the feet prior to releasing the ball for the dribble, happens especially when a player is attempting a body fake; (10) tapping the ball before it reaches its peak on a jump ball occurs with tall players; (11) returning from out of bounds at a more advantageous position; and (12) extending arms into an adjacent space on free throws.

For unskilled players: (1) have more tie balls because players tend to move body and ball slowly; (2) forget to raise arm after a foul; (3) do not understand differences between blocking and charging; (4) lose control of body by jumping forward into opponents rather than upward; (5) forget which foot to use for the pivot; (6) traveling after completing the dribble; (7) take longer than five seconds on a throw-in from out-of bounds; (8) stay in the lane longer than three seconds; (9) fail to hit

basket ring when free throw is missed; and (10) step on or over free throw line on follow-through of free throw.

Magnuson (1963:27) asserted,

Officiating can affect the level of play on any game whether it happens to be an intercollegiate match, an intramural game, or a physical education class tournament. The better the officiating the better the play within the limits of the abilities of the participants. Through good officiating, we can see students improve their individual skills as well as their team play.

Officiating has its effects on the quality of play as well as do the individuals comprising the teams.

CHAPTER III

PROCEDURES

This research investigated the types and frequency of basketball rule infringements that occurred in collegiate play during the 1971-72 competitive season and the First DGWS National Intercollegiate Basketball Championship. After defining the problem and reviewing related information, the following procedures were carried out in pursuing the research.

Preparation of Checklist

A checklist, which provided a means of recording and identifying all possible infringements that could occur during a game, was prepared by the investigator. The following classification data was located at the top of the sheet: team, names, location of the game, date, number of games in season, quarter scores, final score, winner, officials, general game skill as discerned by the statistician--good, average, or poor representation, and name of statistician. All violations were listed on the left half of the sheet; fouls, on the right half for convenience of locating and tabulating. A place was provided to tally each infringement when it occurred--quarter or overtime. Space at the bottom of the sheet was allowed to indicate modifications, if any, such as limited out-of-bounds space, and comments by the statistician concerning the game or officiating. The

initial draft of the checklist was tried on several games, then changes were made to make it a more efficient instrument, i.e., headings were centered and capitalized to facilitate locating on the form; the infringements that occurred less often were moved toward the bottom of the sheet; some infringements were grouped according to type; jump balls occurring were placed in a separate area on the form; instructions concerning use of the tally sheet were written for statisticians. A copy of the checklist and instructions sent to the statisticians are found in Appendix A, page 70.

Selection of Participating Colleges

A letter was sent to the intercollegiate basketball coaches of thirty colleges and universities in the Midwest and Southwest, explaining the study and asking their willingness to participate in the study throughout their 1971-72 season. These two regions were initially involved because of the investigator's familiarity and personal contacts within these geographic sections. The limited availability of funds to carry out the investigation made it impossible to extend the data-gathering to all areas of the country. Eighteen colleges agreed to participate; seven colleges stated it was not possible for them to participate; five colleges did not reply. To supplement the data, additional games with which the investigator herself was involved were also included in the study. Altogether, the study involved data collected during the regular season from ninety-five teams. The participating colleges, whose regular season games were charted, are listed in Appendix B, page 76.

Distribution of Data-Gathering Materials for Use During the Regular Season

Upon receipt of an affirmative reply, a supply of checklists and instructions for the statistician were sent immediately to the coach. Each participating college designated its own statisticians according to criteria of being a basketball player, official, or official-in-training. These standards had been previously explained to the coaches in the mailed materials. Enclosed with the materials was a self-addressed, stamped envelope for returning the completed checklists at the end of their regular scheduled competitive season. Copies of all materials sent to statisticians are in Appendix A, page 70.

Data-Gathering at the National Tournament

The following games at the First DGWS National Inter-collegiate Basketball Championship were charted by the investigator: the championship game, the game for third and fourth place, the two games in the third round, three games in the second round, and three games in the first round of the tournament. Ten teams from all areas of the country were participants in these games. Therefore, a total of 103 teams took part in the study. These teams are listed in Appendix C, page 78.

Tabulation of Data

All data for regular season games were tabulated for analysis on master sheets in relation to quarters and point spread. After discussions with several players, coaches, and officials, the

point spreads of zero to six points for a "close" quarter and seven or more points for a "wider" margin were confirmed as appropriate margins of difference. The frequency of each item on the checklist was hand tallied by the investigator.

The data from the national tournament were analyzed separately in relation to quarters. Due to the high quality of play, all games were considered close; therefore, the data were not analyzed in relation to point spread.

A total of 153 games comprised the data on which this report is based. Thirty-three checklists were eliminated because information was lacking or both officials were not nationally rated. Ten games were duplicated where participating schools competed against each other. This, however, allowed for a check on the accuracy of the statistician's records. One hundred ten checklists from regular season games were analyzed.

Plans for Analysis

Given the purposes of this study, it was planned to analyze the following:

1. Violations and fouls in relation to quarters during regular season games.
2. Violations and fouls in relation to quarters during national tournament games.
3. Violations and fouls in relation to quarters comparing regular season and national tournament.
4. Violations and fouls in relation to points spread during regular season games.

5. Violations and fouls in relation to quarters and point spread during regular season games.
6. Summary of regular season games according to point spread and quarter.
7. Calculation of critical ratio.

Violations and Fouls in Relation to Quarters During Regular

Season Games

The mean violations and fouls occurring in 110 regular season games during each of the four quarters were compared in Table 1, page 34. Violations occurring during the quarters averaged 5.47 in the first quarter, 5.46 in the second quarter, 5.39 in the third quarter, and 5.30 in the fourth quarter. Fouls occurring during the quarters averaged 7.30 in the first quarter, 7.31 in the second quarter, 7.28 in the third quarter, and 7.25 in the fourth quarter. In each quarter, there were more violations than fouls.

Violations and Fouls in Relation to Quarters During National

Intercollegiate Games

From data collected during 100 games at the First 1962 National Intercollegiate Basketball Championship, the mean for

CHAPTER IV

DATA AND ANALYSIS

The data collected in this study describes the types and frequency of basketball rule infringements that occurred at the intercollegiate level during the 1971-72 season and the First DGWS National Intercollegiate Basketball Championship. These were analyzed in relation to quarters, point spread, and comparison of regular season play to national tournament play.

Violations and Fouls in Relation to Quarters During Regular Season Games

The mean violations and fouls occurring in 110 regular season games during each of the four quarters were compared in Table I, page 34. Violations occurring during the quarters averaged 9.49 in the first quarter, 9.46 in the second quarter, 8.99 in the third quarter, and 9.30 in the fourth quarter. Fouls occurring during the quarters yielded means of 7.50 in the first quarter, 7.91 in the second quarter, 7.88 in the third quarter, and 8.76 in the fourth quarter. In each quarter, there were more violations than fouls.

Violations and Fouls in Relation to Quarters During National Tournament Games

From data collected during ten games at the First DGWS National Intercollegiate Basketball Championship, the mean for

TABLE I

VIOLATIONS AND FOULS IN RELATION
TO QUARTERS DURING REGULAR
SEASON GAMES

Quarters	Mean Violations	Mean Fouls
First	9.491	7.500
Second	9.455	7.909
Third	8.991	7.882
Fourth	9.300	8.755

N = 110 games

violations and fouls were calculated for each quarter and are presented in Table II, page 36. During the first quarter of play, a mean of 5.10 violations were called; the second quarter averaged 5.90 violations; third quarter averaged 5.40 violations; and in the fourth quarter, there were 5.10 violations. Fouls called during the tournament were averaged as follows: 6.80 in the first quarter; 8.80 in the second quarter; 7.80 in the third quarter; and 8.20 in the fourth quarter. More fouls than violations occurred in each quarter. Figure 1, page 37, provides a comparison of violations by quarters during regular season games and national tournament games. A comparison of fouls by quarters during regular season games and national tournament games is presented in Figure 2, page 38. Total infringements by quarters during regular season games and national tournament games are presented for comparison in Figure 3, page 39.

Violations and Fouls in Relation to Quarters Comparing Regular Season and National Tournament

Using statisticians' records from 110 games during the regular season, the mean for violations and fouls per quarter mean for each quarter was 9.31 violations and 8.01 fouls indication that there was, on the average, 17.32 infringements called each quarter. For a complete game during the regular season, a mean of 37.24 violations and 32.06 fouls occurred, yielding a mean of 69.29 infringements called during an entire game.

TABLE II

VIOLATIONS AND FOULS IN RELATION
TO QUARTERS DURING NATIONAL
TOURNAMENT GAMES

Quarters	Mean Violations	Mean Fouls
First	5.100	6.800
Second	5.900	8.800
Third	5.400	7.800
Fourth	5.100	8.200

N = 10 games

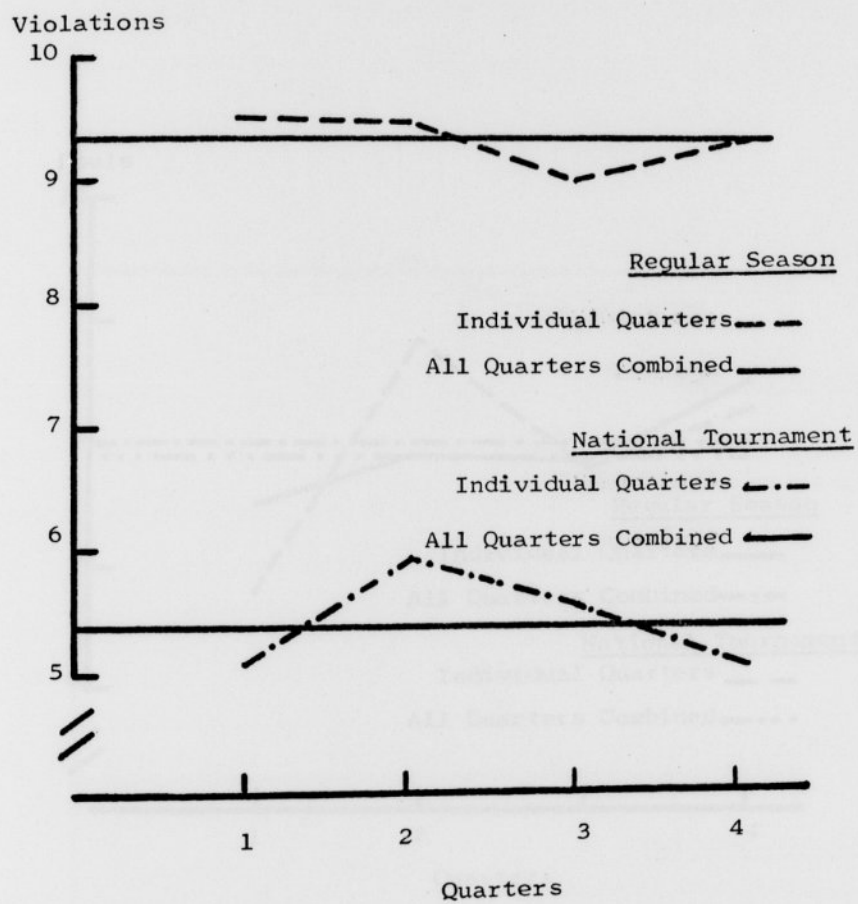


FIGURE 1
 COMPARISON OF VIOLATIONS BY QUARTERS
 BETWEEN REGULAR SEASON AND
 NATIONAL TOURNAMENT PLAY

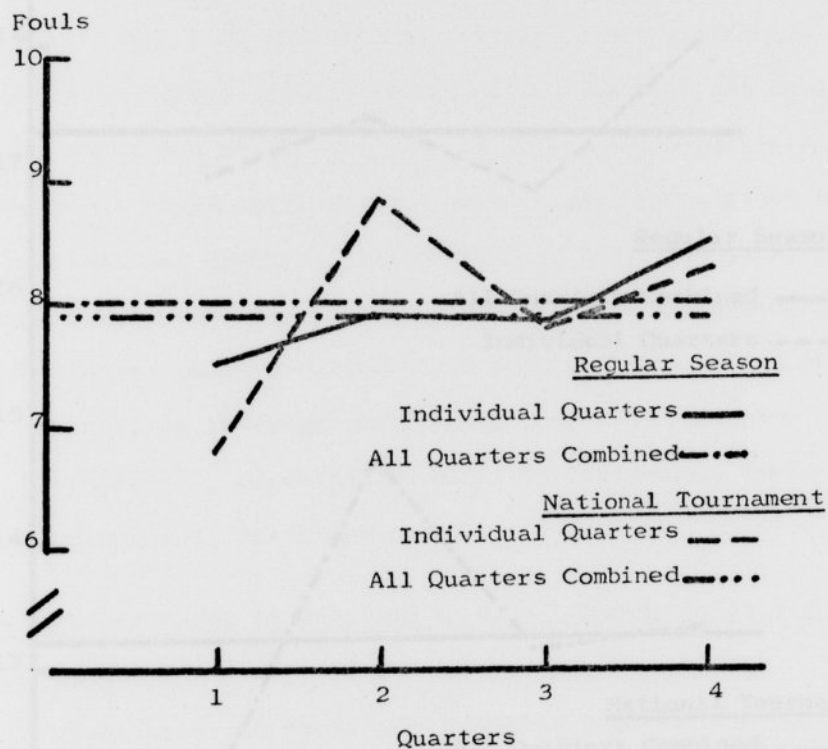


FIGURE 2

COMPARISON OF FOULS BY QUARTERS BETWEEN
REGULAR SEASON AND NATIONAL
TOURNAMENT PLAY

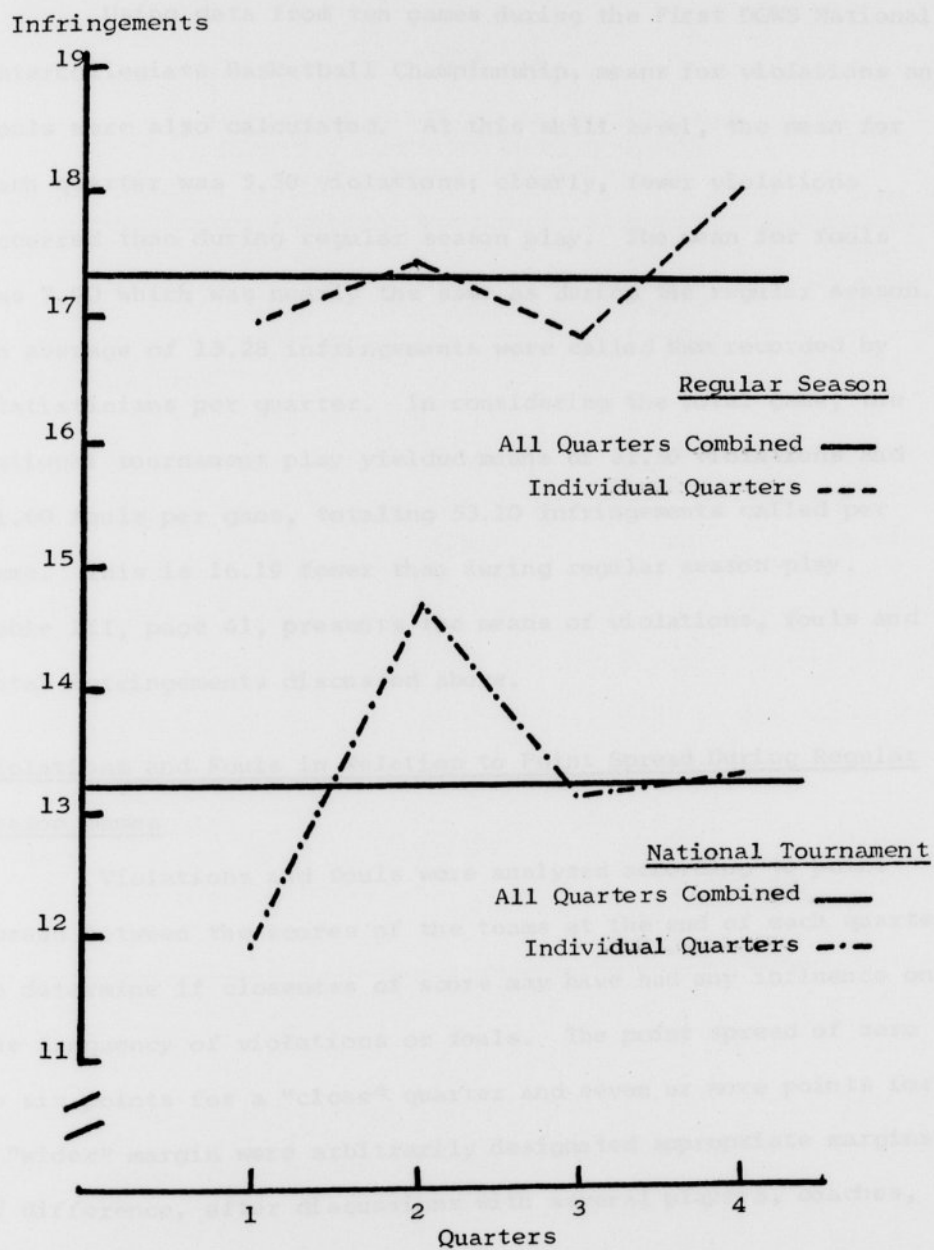


FIGURE 3

TOTAL INFRINGEMENTS IN RELATION TO QUARTERS
COMPARING REGULAR SEASON AND NATIONAL
TOURNAMENT PLAY

Using data from ten games during the First DGWS National Intercollegiate Basketball Championship, means for violations and fouls were also calculated. At this skill level, the mean for each quarter was 5.38 violations; clearly, fewer violations occurred than during regular season play. The mean for fouls was 7.90 which was nearly the same as during the regular season. An average of 13.28 infringements were called then recorded by statisticians per quarter. In considering the total game, the national tournament play yielded means of 21.50 violations and 31.60 fouls per game, totaling 53.10 infringements called per game. This is 16.19 fewer than during regular season play. Table III, page 41, presents the means of violations, fouls and total infringements discussed above.

Violations and Fouls in Relation to Point Spread During Regular Season Games

Violations and fouls were analyzed according to point spread between the scores of the teams at the end of each quarter to determine if closeness of score may have had any influence on the frequency of violations or fouls. The point spread of zero to six points for a "close" quarter and seven or more points for a "wider" margin were arbitrarily designated appropriate margins of difference, after discussions with several players, coaches, and officials.

Violations that occurred during all quarters within a six point spread at the end of the quarter averaged 9.46. There

TABLE III

VIOLATIONS AND FOULS IN RELATION TO
 QUARTERS COMPARING REGULAR SEASON
 AND NATIONAL TOURNAMENT

Item	N	Mean Violations	Mean Fouls	Mean Infringe- ments
Per Quarter				
Regular season	440	9.309	8.014	17.323
National tourna- ment	40	5.375	7.900	13.275
Per Game				
Regular season	110	37.236	32.055	69.291
National tourna- ment	10	21.500	31.600	53.100

were 188 quarters with a 0-6 point spread out of the 110 games that yielded data for the study. In quarters with a point spread of seven points or more, a mean of 9.20 violations were called. Of the 110 games comprising the study, 252 quarters ended with a seven or more point spread. Fouls occurring in quarters with a 0-6 point spread averaged 8.00. In quarters with a seven or more point spread, a mean of 8.02 fouls was calculated. Table IV, page 43, presents these means.

Violations and Fouls in Relation to Quarters and Point Spread
During Regular Season Games

In first quarters ending with a 0-6 point spread, a mean of 9.30 violations occurred. First quarters with a seven or more point spread averaged 9.82 violations. During second quarters ending with point spread of 0-6, there were 10.08 violations. Second quarters with a seven or more point spread quarters ending with a 0-6 point spread, 8.82 violations were analyzed. Mean violations in third quarters with a seven or more point spread were 9.07 violations. Fourth quarters with a 0-6 point spread averaged 9.84 violations. Fourth quarters with a seven or more point spread yielded a mean of 9.22 violations. These data are presented in Table V, page 44, and Figure 4, page 45.

Fouls occurring during first quarters ending with a 0-6 point spread averaged 7.53. A mean of 8.45 fouls occurred in first quarters where the score was spread by seven points or more. During second quarters ending with a 0-6 point spread, a

TABLE IV

VIOLATIONS AND FOULS IN RELATION
TO POINT SPREAD DURING
REGULAR SEASON GAMES

Point Spread	N	Mean Violations	Mean Fouls
0-6	188	9.457	8.000
7 or more	252	9.198	8.024

TABLE V
 VIOLATIONS AND FOULS IN RELATION TO
 QUARTERS AND POINT SPREAD DURING
 REGULAR SEASON GAMES

	N	0-6 Violations	N	7 or More Violations	N	0-6 Fouls	N	7 or More Fouls
First	70	9.300	40	9.825	70	7.529	40	7.450
Second	51	10.076	59	8.915	51	8.216	59	7.644
Third	34	8.824	76	9.066	34	8.500	76	7.605
Fourth	33	9.845	77	9.221	33	8.152	77	9.026

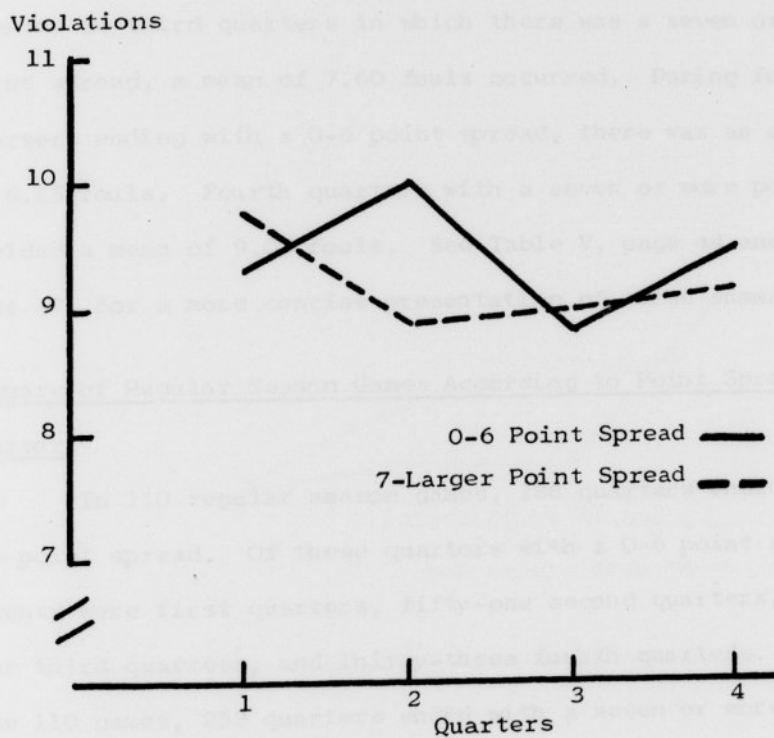


FIGURE 4

COMPARISON OF VIOLATIONS ACCORDING
TO QUARTERS AND POINT SPREAD
DURING REGULAR SEASON GAMES

mean of 8.22 fouls occurred. In second quarters with a seven or more point spread, 7.64 fouls were calculated. In third quarter play with a 0-6 point spread, there was an average of 8.50 fouls, whereas in third quarters in which there was a seven or more point spread, a mean of 7.60 fouls occurred. During fourth quarters ending with a 0-6 point spread, there was an average of 8.15 fouls. Fourth quarters with a seven or more point spread yielded a mean of 9.03 fouls. See Table V, page 44 and Figure 5, page 47, for a more concise presentation of these summaries.

Summary of Regular Season Games According to Point Spread and Quarter

In 110 regular season games, 188 quarters ended with a 0-6 point spread. Of these quarters with a 0-6 point spread, seventy were first quarters, fifty-one second quarters, thirty-four third quarters, and thirty-three fourth quarters. In the same 110 games, 252 quarters ended with a seven or more point spread. Of these quarters with a seven or more point spread, forty were first quarters, fifty-nine second quarters, seventy-six third quarters, and seventy-seven fourth quarters. Table VI, page 48, summarizes this data.

Out of the total 110 games, which generated data for this study, there were twenty in which all four quarters ended with a 0-6 point spread; there were thirty-five games having every quarter ending with a seven or more point spread. In the remaining fifty-five games, actually 50 percent of the total games

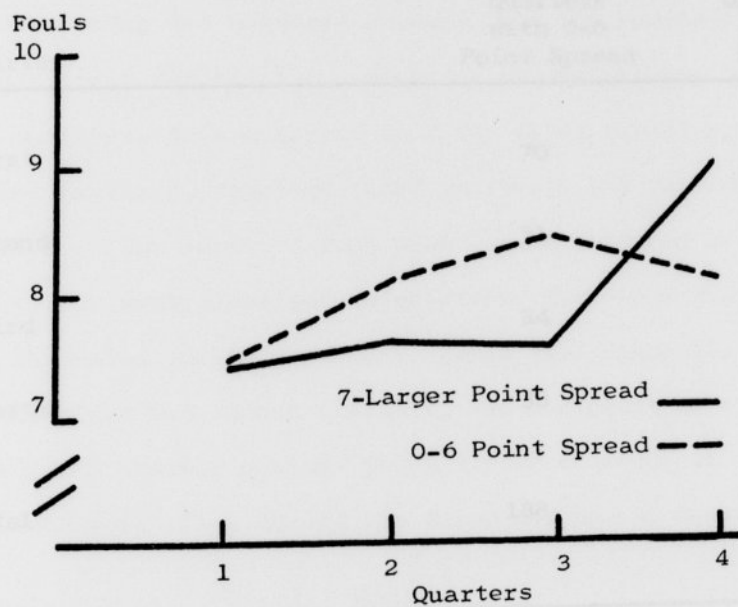


FIGURE 5

COMPARISON OF FOULS ACCORDING TO
QUARTERS AND POINT SPREAD
DURING REGULAR SEASON
GAMES

TABLE VI

SUMMARY OF REGULAR SEASON GAMES ACCORDING TO
NUMBER OF GAMES WITH A GIVEN POINT
SPREAD DURING EACH QUARTER

Quarter	Quarters with 0-6 Point Spread	Quarters with 7 or More Point Spread
First	70	40
Second	51	59
Third	34	76
Fourth	33	77
Total	188	252

Total games = 110

sampled, quarters ended in mixed point spreads with at least one having a 0-6 point spread and at least one quarter ending with a seven or more point spread. Table VII, page 50, presents these summaries.

Further analysis of the fifty-five games with mixed point spreads among the quarters reveals that 108 quarters had a 0-6 point spread and 112 had a seven or more point spread. Of the 0-6 quarters, this occurred in fifty first quarters, thirty-one second quarters, fourteen third quarters, and thirteen fourth quarters. The seven or more point spread occurred in five first quarters, twenty-four second quarters, forty-one third quarters, and forty-two fourth quarters. Table VIII, page 51, reveals that in the first and second quarters, the 0-6 point spread occurred more often whereas a wider point spread of seven or more points occurred more often during the third and fourth quarters.

Calculation of a Critical Ratio

The only difference among data gathered which seemed large enough to warrant further testing was comparison between violations occurring during regular season play to those at the national tournament level. Fisher's "t" was applied to determine if this difference was statistically significant or if it could have occurred because of chance. Critical ratios between violations recorded during regular season games and national tournament play were found to be significant beyond the .01 level, see Table IX, page 52. This real difference between means of violations occurring during regular season play and national

TABLE VII

SUMMARY OF REGULAR SEASON GAMES ACCORDING TO
NUMBER OF GAMES WITH ALL FOUR QUARTERS
ENDING WITH A GIVEN POINT SPREAD

Point Spread	Number of Games
0 - 6	20
7 or more	35
Mixed games*	55
Total	110

*Mixed games - Games having at least one quarter with a 0-6 point spread and at least one quarter with a seven or more point spread.

TABLE VIII

SUMMARY OF REGULAR SEASON GAMES ACCORDING
TO NUMBER OF QUARTERS WITH MIXED
POINT SPREADS DURING THE GAME

Quarter	Quarters with 0-6 Point Spread	Quarters with 7 or More Point Spread
First	50	5
Second	31	24
Third	14	41
Fourth	13	42
Total	108	112

Total games = 55

TABLE IX

CRITICAL RATIOS OF VIOLATIONS OCCURRING PER
 QUARTER AND PER GAME DURING REGULAR
 SEASON AND NATIONAL TOURNAMENT

Item	N	Mean	df	t
Per quarter - Regular season	440	9.309	478	5.929 ^a
Per quarter - National tournament	40	5.375		
Per game - Regular season	110	37.236	118	3.906 ^a
Per game - National tournament	10	21.500		

^aSignificant at .01 level.

tournament play permits one to infer that in games characterized by a higher quality of play, such as those occurring at the national tournament, there are fewer violations made than in the average seasonal intercollegiate play.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

This study investigated the types and frequency of basketball rule infringements that occurred in collegiate play during the 1971-72 competitive season and the First DGWS National Intercollegiate Basketball Championship. The research sought to answer the following questions:

1. What types and frequency of basketball rule infringements occur during regular season intercollegiate games?
2. How does the game score relate to rule infringements? Are there differences in frequency of violations and fouls when the point spread is greater or less than six?
3. Is there a pattern of occurrence of rule infringements in relation to quarters of the game?

A checklist for recording and identifying rule infringements as they occurred during the game was prepared. Then a letter was sent to the intercollegiate basketball coaches of thirty colleges and universities in the Midwest and Southeast asking their willingness to participate in the study. Rule infringements occurring during games of eighteen of these colleges

and universities were recorded throughout their seasons, thus providing the data for the study. Also, selected games at the First DGWS National Intercollegiate Basketball Championship were observed and recorded. A total of 103 teams took part in the complete study. Rule infringements called by nationally rated officials during the games were recorded on the checklist by trained statisticians who had experience as basketball players, officials, or officials-in-training. Checklist, instructions for statisticians, and a self-addressed, stamped envelope for returning the completed checklists at the end of their regular scheduled competitive season were mailed to the coach of each participating team.

The data were analyzed by comparing the following means: (1) violations and fouls in relation to quarters during regular season games; (2) violations and fouls in relation to quarters during national tournament games; (3) violations and fouls in relation to quarters comparing regular season and national tournament; (4) violations and fouls in relation to point spread during regular season games; and (5) violations and fouls in relation to quarters and point spread during regular season games. A summary of regular season games was presented according to different quarters and point spread. Critical ratios were calculated by applying Fisher's "t" where the difference in means seemed to warrant further testing.

Conclusions

Within the limits of the investigation, the data permit the following responses be made to the questions posed at the outset of the study.

1. What types and frequency of basketball rule infringements occur during regular season intercollegiate games and national tournament games?

The only type of infringements considered were violations and fouls. Although it was originally intended that the frequency of various violations and fouls be recorded and analyzed, this was not possible. Statisticians agreed on the total number of violations and fouls that occurred, however, they often disagreed on the exact violation or foul called. This was obvious in comparing duplicate checklists. The problem of identifying specific infringements is discussed later in the chapter.

Concerning the frequency of rule infringements, there is a real difference between means of violations occurring during regular season games and these occurring during national tournament competition. This difference leads to the conclusion that in games characterized by a higher quality of play, such as those occurring at the national tournament, there are fewer violations made than in the average seasonal intercollegiate play.

Little difference was found between mean frequencies of fouls occurring during regular season and national tournament games. This would lead one to conclude that there is a general similarity in the number of fouls called in intercollegiate games regardless of the quality of play. Some possible explanations for this finding are elaborated in the latter part of this chapter.

2. How does the game score relate to rule infringements?
Are there differences in frequency of violations and

fouls when the point spread is greater or less than six?

The data indicated that point spread, whether greater or less than six, had little affect on the average frequency of violations and fouls occurring during regular season games.

3. Is there a pattern of occurrence of rule infringements in relation to quarters of the game?

There was no pattern of occurrence of violations or fouls in relation to quarters during either regular season play or national tournament play. The frequency of infringements per quarter varied only slightly from the total game average.

Discussion

In view of the observations and comments made by the statisticians, the results of this study warrant further explanation. It is reasonable to question why different types of violations and fouls were not analyzed. The decision not to specify the names of each infringement called was made after comparing duplicate records by statisticians recorded on the same games. At the bottom of the checklist in the place provided for comments, statisticians frequently stated that officials were often not clear with their verbal or visual signals. The most frequent discrepancies occurred concerning illegal dribbles and traveling, i.e., the signal for traveling would be used when an illegal dribble had occurred and vice versa. Also, the distinction between hacking and holding was difficult to observe, i.e., the verbal signal was not clear and often the same visual signal would

be used for both fouls. The signal for pushing was reportedly often used when the call was blocking. This necessitated the statistician's deciding whether to record the visual signal given or the verbal call. Frequently, tripping fouls were reportedly indicated as blocking by the official.

Additional comments were made by statisticians that arm signals were not held long enough for spectators or players to see and, further, that verbal signals were neither clear nor loud enough to be understood. This same situation occurred at the national tournament when the investigator herself served as a statistician and charted the games. Officials were lax about techniques of communication with players and spectators. Whereas the team color and number of the player were clearly indicated to the scorer, the precise foul was not designated. Koenig (1969a) alluded to this problem when she offered the reminder that a top official must work constantly on proper and effective techniques for she must be able to communicate with the players, scorers, and spectators.

The conclusion that fewer violations occur during games having a higher quality of play is clearly understandable. Players participating in the national tournament demonstrated advanced playing skills discussed by Barnes (1961) as body control, ball-handling skills, speed, a change of pace stamina, aggressiveness, and anticipation. These traits, associated with a high level of skill, provided a caliber of play in which fewer violations occurred.

If highly skilled players commit fewer violations, one might expect that they also commit fewer fouls. It could be reasoned that this would occur because they have better body control. In this study, though, there was no difference between the average number of fouls occurring during regular season and in national tournament play. Following are reasons offered by the investigator as to why no difference was found in the data collected on fouls:

1. The fact that more violations occurred during regular season play suggests that a violation occurred before the play could develop sufficiently to build up to a foul situation.
2. At the national tournament, with fewer violations occurring, more plays were allowed to develop and, therefore, provided more situations in which fouls could take place.
3. Officiating could possibly be a factor explaining the results of the study, in spite of the fact that all of the games were officiated by nationally rated officials. Though all officials held the same rating, there may have been differences in interpretations of various infringements. These may be related to geographical area or to the officiating experience of each person whose calls made up the data for the study. The investigator did not feel, personally, that games in the national tournament were called overly close. This eliminates the reason

some people offer that tournament officials call fouls closer than do officials during the regular season games. It is possible that officials during the regular season did not call fouls as close as they should be called but allowed many sloppy fouls to go by uncalled. There is, after all, a great deal of personal judgment left to each individual official. Barnes (1968)

addressed this problem in her discussion of the challenge and difficulty of adjusting calls to the level of play.

4. The fact that all teams at the national tournament were quite evenly matched skill-wise forced each team to put forth its best efforts during all four quarters. The score is able to change so rapidly when a high level of skill makes up the game play, no point spread could necessarily be considered a "comfortable" lead. During the regular season, a large point spread built up in a number of games, thus permitting one team to play a more relaxed type of game than was ever possible at the national tournament.

Another factor that comes to light in this study is that point spread had no bearing whatever on the frequency of infringements. The closer the game and more tightly played, the more one might expect additional body contact. However, when a team gains a lead, the regular five to eight players who are on the court most of the time during a close game are often replaced by substitutes. If the team is large, the skill level of the last of the

substitutes may be quite below that of the starting five players. This skill differentiation may be reflected in poorer body control. In other words, these players are likely to commit more fouls making the average in quarters with a wider point spread similar to that of quarters with a small point spread.

One of the original assumptions of the study was that there was a high standard of officiating when games were called by nationally rated officials. However, it was also acknowledged, previously, that there are differences in interpretations and techniques used by nationally rated officials. These may vary according to geographical area, traditions of local boards and/or in the personal judgment of individuals. The Officiating Services Area of the DGWS is continually attempting to keep these discrepancies at a minimum. A new rating system is planned to be put into effect in 1972. But, while the Officiating Services Area sets standards, it is the responsibility of each instructor who teaches and trains officials to see that they are met. With the increasing need for qualified women officials, it is more and more important that officiating courses be taught effectively and frequently in departments of physical education.

Implications

Because of the recent change to five-player basketball for women, there is a lack of literature and research in this "new" game. This study emphasizes the need, throughout the nation, for conducting research that involves actual game situations. This

could be especially valuable to the Association for Intercollegiate Athletics for Women, the organization responsible for controlling women's intercollegiate competition. The investigator found that almost all of the information on officiating is based on individuals' experiences; very little is based on scientific inquiry. Many teams across the nation keep records but there is little done with these thousands of statistics that might be used to analyze the game and its many components--including officiating.

From comments made by the statisticians, it became evident that after making some refinements of the checklist that the instrument may have use as a teaching aid for the training of officials. Some statisticians felt they became more aware of the game and the officials' duties when recording the infringements. It is the writer's intent to further develop the checklist for use as a teaching aid in the training of officials. Hopefully, such an endeavor has the potential of contributing tangibly to the training of officials. And if, indeed, it follows that good officials contribute to the quality of the competitive experience, the checklist devised for use in this study may influence women's basketball play.

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APPENDIXES

233 North, Box 34
 UNC-4
 Greensboro, N. C. 27402
 December 20, 1971

Dear Intercollegiate Basketball Coach:

As a teacher's candidate at The University of North Carolina at Greensboro, I am conducting a research investigation of basketball rule infractions. The study involves the recording of rule infractions, called by the officials, during the regular competitive schedules of selected colleges, universities, and high schools across the nation, which are being asked to cooperate in the study.

The purpose of this letter is to solicit your school's participation. It is my hope the study will generate information on the five-player game which will be given to coaches, parents, and officials.

APPENDIX A

Correspondence Checklist and Instructions

The enclosed "checklist" is a "statistical" form for your school's use. I am sure you will become familiar and comfortable in their recording. Except a few physical education majors you do not play on the intercollegiate basketball teams would profit from such an experience. Only first and second pages will be used if a school has more than two teams.

Please indicate on the enclosed post card whether or not it is feasible for your school to participate in the study. Your receipt of your response, a supply of checklists and specific information concerning this use will be sent to you.

I hope you wish to be involved in obtaining the new information relative to the present game of five-player basketball and will answer affirmatively.

Sincerely,

Jan Straubinger

Enclosure: Post Card

233 Annex, Box 514
UNC-G
Greensboro, N. C. 27412
December 20, 1971

Dear Intercollegiate Basketball Coach:

As a master's candidate at The University of North Carolina at Greensboro, I am conducting a research investigation of basketball rule infringements. The study involves the recording of rule infringements, called by the officials, during the regular competitive schedules of selected colleges, universities, and high schools across the nation, which are being asked to cooperate in the study.

The purpose of this letter is to solicit your school's participation. It is my hope the study will generate information on the five-player game which will be of use to coaches, players, and officials. If you are agreeable to being a part of this research, it will entail having a "statistician" from your school chart, on a prepared single page checklist, the rule infringements called during the games. It is hoped that if the same two or three girls chart all the games they will become familiar and competent in their recording. Perhaps a few physical education majors who do not play on the intercollegiate basketball teams would profit from such an experience. Only first and second teams will be used if a school has more than two teams.

Please indicate on the enclosed post card whether or not it is feasible for your school to participate in the study. Upon receipt of your response, a supply of checklists and specific information concerning their use will be sent to you.

I hope you wish to be involved in obtaining the new information relative to the present game of five-player basketball and will answer affirmatively.

Sincerely,

Jan Strausberger

Enclosure: Post Card

233 Annex, Box 514
UNC-G
Greensboro, N. C. 27412
January 8, 1972

Dear Statistician:

First, I would like to thank you for assisting in this study on basketball rule infringements. I hope this experience will be of benefit to you and offer you the opportunity to gain some new insights of your own in the game of basketball.

Enclosed are a supply of checklists and information sheets to explain the charting procedure as well as answer any questions you might have. If you need any further information or additional checklists, please let me know and I will be glad to send the needed information.

At the end of February, send all your completed checklists to me in the envelope enclosed. Please enclose a note as to whether your season is completed or if you will be sending additional checklists at the end of your season. Tournaments will not be charted, only games during the regular competitive schedule of the teams will be used.

Thank you again for your assistance. Good luck to you, your coach, and your intercollegiate teams for a very successful season.

Sincerely,

Jan Stausberger

Enclosures: Checklists
Information Sheets
Return Envelope

BASKETBALL CHECKLIST

Teams #1 _____ Score _____ College _____ High School _____
 #2 _____ Won By _____ Game Skill: (subjective judgment)
 Place _____ Officials: _____ 1. Good representation _____
 Date _____ 2. Average representation _____
 #Game of Season #1 _____ #2 _____ 3. Poor representation _____
 Quarter Scores:
 Team #1 _____ Statistician: _____
 Team #2 _____

VIOLATIONS	1	2	3	4	OT	FOULS	1	2	3	4	OT
HANDLING-THE-BALL						Blocking					
Combine dribble & air dribble						Charging					
Fis:						Hacking					
Illegal dribble						Holding					
Kicking ball						Pushing					
Traveling						Tripping					
OUT-OF-BOUNDS						Pulling off balance					
Causing ball to go out-of-bounds						Threatening eyes					
Putting ball back into play						Delay of game					
5 sec.						Unsportsmanlike					
3 ft. if limited						Roughness					
Retaining at advantageous pos.						TEAM FOULS					
Intentionally throw ball against opp.						Illegal sub.					
3 sec. lapse						Leaving court					
30 sec. clock						False ATM					
JUMP BALLS						Designate lines					
Line V. (jumper)						Too many time-outs					
Ball V. (jumper)						Spectator int.					
Non-jumper V.						Coach int.					
FREE THROWS						JUMP BALLS					
Doesn't touch ring						Tie ball					
Shooter in lane						Held ball in pa					
Player in lane						Double V.					
10 sec.						Double foul					
FIELD GOALS						Rule Modifications:					
Goaltending						Comments:					
Goal from out-of-bounds											

CHECKLIST PROCEDURES AND INFORMATION

1. Fill out information at top of sheet:

Teams -- Put your own team as Team #1 and your opponent as Team #2.

Game in Season -- For example, it is Team #1 - 5th game of their season and #2 - 7th game of their season.

Quarter Scores -- The score at the end of each quarter.

Officials -- Include names, which you can obtain from the official scorer or probably from your own coach. Indicate official's rating only if it is not a national. If there is no indication, I will assume both are national officials.

Game Skill -- This is the statistician's subjective judgement of the level of performance. This does not describe how your team played but is a general description of the game; play was good, average, or poor.

Statistician -- Your name.

2. At the bottom of the sheet note:

Rule Modifications -- Such as, 3 ft. rule on out-of-bounds space, no 30 second clock, any special ground rules, length of quarters if not 8 minutes, etc.

Comments -- At the end of the game, note any items that you feel may have affected the play of the game or the charting of the rule infringements; for example, noisy crowd, could not hear officials, could only go by arm signals, officials were not clear on signals so had to use my own judgement, etc.

3. Throughout the game, chart every rule infringement called by the officials with a tally mark following the infringement under the correct quarter or overtime (OT). Every time the whistle blows, you should be marking something except for time-outs and quarters. The official should make both a visual and verbal announcement of the infringement. You will need to acquaint yourself with the officials' arm signals which appear on the back cover of the rule guide. It makes no difference which team committed the infringement. The checklist is for all infringements called during the game, regardless of team.

4. At the end of each quarter, total the tally marks in each box and circle. (See sample checklist enclosed.) At the end of the game, if you have not used the overtime column, total the marks for each infringement and record it in the OT column.

5. On the sample checklist, the rule and section number of each infringement is indicated. If you are not clear what each line should include, you can check in the rule guide for the exact wording and interpretation of the rule. Some headings encompass two or three similar infringements. The fouls, charging and pushing, are indicated by the same arm signal, therefore, you must listen for the verbal call to tell which foul it was or on whom it was called since charging is done only by the player with the ball.

GOOD LUCK

DATA GATHERING INSTITUTIONS

Illinois

Carroll College
 Concordia Teachers College
 Northern Illinois University
 Southern Illinois University
 Southern Illinois University
 Southern Illinois University
 Southern Illinois University

Indiana

Indiana State University
 Indiana University

Iowa

University of Northern Iowa

APPENDIX B

Data Gathering Institutions

Michigan

Eastern Michigan University
 Western Michigan University

Minnesota

Augustana State College

North Carolina

Appalachian State University
 Western Carolina University
 University of North Carolina at Greensboro

North Carolina

Wake Forest University

Wisconsin

University of Wisconsin at LaCrosse
 University of Wisconsin at Madison

DATA GATHERING INSTITUTIONS

Illinois

Aurora College
Concordia Teachers College
Northern Illinois University
Southern Illinois University
Western Illinois University
Wheaton College

Indiana

Indiana State University
Indiana University

Iowa

University of Northern Iowa

Michigan

Eastern Michigan University
Michigan State University

Minnesota

Bemidji State College

North Carolina

Appalachian State University
Bennett College
University of North Carolina at Greensboro

South Carolina

Winthrop College

Wisconsin

University of Wisconsin at LaCrosse
University of Wisconsin at Madison

TEAMS INVOLVED IN THE STUDY

Appalachian State University
A & T State University
Aurora College
Averett College

Ball State University
Bemidji State College
Bennett College
Bowling Green State University
Bradley University

Carthage College I
Carthage College II
Catawba College
Coker College
Concordia College - Minnesota
Concordia Teachers College I - Illinois
Concordia Teachers College II

Duke University

East Carolina University
Eastern Illinois University
Eastern Michigan University I
Eastern Michigan University II
East Tennessee University
Elon College

George Williams College
Guilford College

High Point College

Illinois Benedictine
Illinois State University I
Illinois State University II
Indiana State University
Indiana University

Jackson Community College

Lake Forest College
Lake Superior State College
Livingston College
Luther College

Mars Hill College
Marygrove College
Meredith College
Michigan State University I
Michigan State University II
Moorehead State College

North Central College
Northeastern State College
North Dakota State University
Northern Illinois University I
Northern Illinois University II
Northwestern University

Olivet Nazarene College

Pekin-Peoria Community College
Purdue University

River Falls College
Rockford College
Rock Valley College
Rosary College

Southern Illinois University
St. Augustine College
St. Cloud State College
Stout State University

University of Illinois I
University of Illinois II
University of Illinois at Circle Campus
University of Iowa I
University of Iowa II

University of Minnesota at Duluth
University of North Carolina at Greensboro
University of North Carolina at Chapel Hill
University of North Dakota
University of Northern Iowa I
University of Northern Iowa II
University of South Carolina
University of Tennessee
University of Toledo

University of Wisconsin at Eau Claire
University of Wisconsin at LaCrosse I
University of Wisconsin at LaCrosse II
University of Wisconsin at Madison I
University of Wisconsin at Madison II
University of Wisconsin at Milwaukee

University of Wisconsin at Oshkosh
University of Wisconsin at Whitewater I
University of Wisconsin at Whitewater II

Upper Iowa University I
Upper Iowa University II

Valparaiso University

Wake Forest University
Wartburg College
Western Carolina University
Western Illinois University
West Georgia College
Wheaton College I
Wheaton College II
Winona State College
Winthrop College
Wright Junior College

NATIONAL TOURNAMENT TEAMS
INVOLVED IN THE STUDY

California State College at Fullerton

Immaculate College

Indiana University

Mississippi State College for Women

Northern Illinois University

Phillips University

Queens College of the City University of New York

Utah State University

Washington State University

Westchester State College