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**The effects of three styles of instruction on the improvement of
fundamental volleyball skills**

Norris, Barbara Ann, D.A.

Middle Tennessee State University, 1988

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**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

The Effects of Three Styles of Instruction
on the Improvement of Fundamental
Volleyball Skills

Barbara Ann Norris

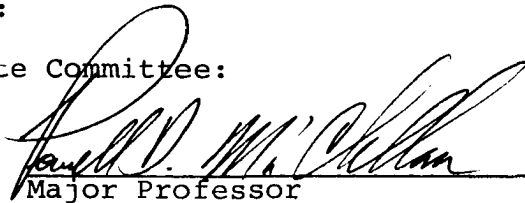
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in partial fulfillment of the requirements
for the degree Doctor of Arts

May, 1988

The Effects of Three Styles of Instruction
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Volleyball Skills

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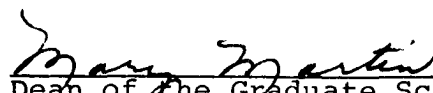
Graduate Committee:


Major Professor


Committee Member


Committee Member


Head of the Department of Health, Physical Education,
Recreation, and Safety


Dean of the Graduate School

Abstract

The Effects of Three Styles of Instruction on the Improvement of Fundamental Volleyball Skills

by Barbara Ann Norris

This study was designed to determine the effects of three instructional approaches on improvement of selected skills in beginning volleyball at the college level. The instructional approaches utilized were: (1) traditional instruction, (2) reciprocal instruction, and (3) contingency management instruction. The subjects were 54 male and female students enrolled in three volleyball service classes at Middle Tennessee State University. These classes met for 50 minutes twice a week for 16 weeks and were taught by the investigator. Improvement in performance of the fundamental volleyball skills was determined by pretest and posttest scores on three skills tests: (1) American Alliance of Health, Physical Education, Recreation, and Dance (AAHPERD) Passing Test, (2) the AAHPERD Set-Up Test, and (3) the AAHPERD Serving Test. The .05 level was used to determine significance for all statistical analyses. Preliminary analysis for homogeneity among the three groups was performed through the use of a series of three one-way analyses of variance

Barbara Ann Norris

(ANOVAs) comparing pretreatment scores. The groups were found to be homogeneous. The posttest ANOVAs on the skills of serving and setting revealed that a significant difference existed among the three groups. Scheffé's test revealed a significant difference on the skill of serving between the traditional and contingency management group, and a significant difference between the reciprocal and contingency management group. The traditional and reciprocal instruction groups yielded significantly higher scores than the contingency management style instruction. Scheffé's test also revealed a significant difference between the traditional and reciprocal instruction groups for the skill of setting. The reciprocal instruction yielded significantly higher scores than the traditional group.

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Chapter 1

Introduction

Educationists (Rushall & Siedentop, 1972) and laymen often marvel at the industriousness and joy which most young children exhibit in the early stages of their formal education. For many children, these behaviors die out rather quickly. They are often replaced with behaviors that range from acceptance to hostility toward teachers and the process of education. Physical educators have often wondered how a young child who obviously enjoys physical education can grow into an adolescent who either just passes physical education because it is required or tries to find ways to avoid it.

Various teaching styles have emerged in an attempt to remedy this problem. "A teaching style can be seen as the bridge between the structure of subject matter and the structure of learning" (Mosston, 1966, p. 2). What the teacher brings to this process of bridging is his total self--his cultural background, all his biases and personal limitations, his own needs for self-assertion, and his value structure--and this will in turn largely dictate his behavior and the content of his teaching.

Many works prior to the 1960s focused on the structure of learning and the structure of subject matter. The structure of teaching was either lightly mentioned or not mentioned at all.

If people were to assume they know everything about the structure of learning and the structure of all subject matter, how do they go about connecting the two? Do they leave it to chance, to an individual teacher's mood, or to personal opinion? Perhaps realistic ways to bridge the gap between student and the subject matter should be proposed. The end result then could be a relationship based on the involvement and interaction of three participants: the teacher, the student, and the subject matter.

Numerous studies have been done comparing traditional instruction to various other styles of instruction, both in the area of sport skills and in other academic fields. Studies regarding contingency management and reciprocal instruction in the area of sport skills have been limited. This study sought to determine the effects of traditional instruction, reciprocal instruction, and contingency management instruction on the specific skills of serving, setting, and passing in volleyball.

Anyone concerned with teaching of sport skills should want to utilize the best teaching methods available. There are many different ways of presenting materials

to the sport skill class. Research in this area could be helpful in determining which method best suits a particular sport skill.

Limitations of the Study

Certain uncontrollable variables that could have affected this study include:

1. Motivation levels of the students.
2. The amount of carry-over learning gained from previous experiences.
3. Predetermined selection by patterns of registration.

Definition of Terms

For the purpose of this study, the following terms are defined as:

Traditional instruction. A method of instruction which involves explanation and demonstration by the teacher of the skills to be learned, practiced by the students in individual, dual, and small group drills, and playing in the game situation.

Reciprocal instruction. A method of instruction in which the teacher explains and demonstrates the task, followed by student practice in groups of two, with one student performing the task and the other student providing corrections, criticism, or praise.

Contingency management instruction. A method of instruction which involves explanation and demonstration

by the teacher of the skill to be learned, individual practice by the student utilizing a list of performance objectives involving skill, and playing in the game situation.

Passing. The act of moving the ball between teammates from the back court to the setting zone, usually executed with a forearm bump pass but sometimes with an overhead pass.

Setting. The act of putting the ball into the air near the net to enable a teammate to spike the ball, usually involving the overhead passing technique; but the forearm bump passing procedure may be utilized.

Serving. The act of putting the ball into play at the beginning of the game and after each point and side-out; usually executed with an overhead serve, but the underhand serve may be utilized.

Hypotheses

The following null hypotheses were tested:

H_1 : There will be no differences in mean setting skill performance as a result of the experimental treatments.

H_2 : There will be no differences in mean passing skill performance as a result of the experimental treatments.

H_3 : There will be no differences in mean serving skill performance as a result of the experimental treatments.

H₄: There will be no differences in setting, passing, and serving ability among the three groups based on the initial test data.

Review of Literature

Studies Related to Reciprocal Instruction

The reciprocal style of teaching appears as the third level of what Mosston (1966, 1981) refers to as his Spectrum of Styles. The idea behind the Spectrum is to gradually diminish the student's dependency on the teacher until the "free" student emerges.

It is logical that a one-to-one relationship can be very helpful during the learning process. The buddy system has been used for various purposes--for example, safety in the water, spotting on the apparatus, and ball passing in various games. The partner in these cases acts only in a secondary role. In Mosston's Spectrum of Styles, under the reciprocal style, the partners take on a more active role in the development of skills.

The process itself involved three cycles. In cycle one, a single task is given, demonstration by the instructor is given, the pairs disperse, doers perform the skill--observers watch for details of the skill. When the skill is completed, the observers are asked by the teacher to tell the doers which parts were well performed and which details need to be corrected. In cycle two, several

tasks are presented which are part of the same activity--permitting the student to experience longer periods of independence in performing and to learn a larger quantity of subject matter. Any pair that reaches an operational level will be able to demonstrate a cooperative relationship between partners, a satisfactory degree of self-acceptance in each role, and an ability to comprehend the tasks at hand; consequently, they manifest a different kind of physical response. During cycle three, more tasks are given through the use of a multiple-task sheet.

The reciprocal style has been successfully used in elementary and secondary schools and at the college level. It provides an excellent opportunity to enhance the social climate in the class by creating a situation where a student is actually dependent on the help of a peer. The student learns how to receive criticism and evaluation from the peer.

Goldberger and Gerney (1982) compared the effects of Mosston's (1966, 1981) teaching styles B (Practice), C (Reciprocal), and E (Inclusion), which were examined in terms of motor skill acquisition and social skill development of fifth-grade children. An analysis of the results revealed that all three groups learned the task comparably well. It was concluded that these three styles of teaching are all effective in facilitating learning of

this type of motor task (hockey accuracy skill). Style C, the reciprocal style, was found not only to produce comparable learning but to significantly enhance social skill development on those behaviors associated with giving feedback and receiving it from a peer.

Hartley (1973) conducted a study involving paired programmed learning. He found the following advantages to learning in pairs: (1) greater economy, (2) less boredom for pupils, and (3) greater interpersonal interaction leading to better learning and increased retention. Hartley (1970) also found that letting students select their own partners created a more favorable attitude.

Studies Related to Contingency Management Instruction

Contingency management refers to changing behavior by controlling the behavior and a consequence of that behavior. Its origins lie in Premack's (1963, 1964) experimental work. The principle that emerged from his experiments was that a high probability event could be used to reinforce a low probability event. If exercising is a low probability event for a particular student, this behavior can be strengthened by reinforcing it with the opportunity to engage in a high probability event such as basketball.

In 1963, Homme, C'deBaca, Devine, Steinhurst, and Ricket first applied Premack's work to the control of behavior in an educational setting. Working with three-year-old, nursery-school children, these researchers sought to control the children's behavior without using punishment or such material reinforcers as candy. Following Premack's principle, Homme et al. (1963) viewed the jostling, running, and screaming behaviors as high probability events. They made those events contingent upon very small amounts of low probability behavior such as sitting quietly and watching the blackboard. This kind of contingency behavior put them in immediate control of the situation. They and the teacher were in control to the extent that they were able to teach in about one month everything that they could discover was ordinarily taught in first grade.

In 1971, Tosti and Loehr first used the term "contingency management" to describe the kind of control procedures used by Homme et al. (1963). Tosti and Loehr (1971) decided that a reinforcer was needed to control the programmed-study behaviors of their students. A simple contingency of a certain number of frames of programmed material would result in a chance to take part in the activity they liked. The procedure worked very well.

Lovitt, Guppy, and Blattner (1969) published a report which supports the theory that a single classroom teacher can administer a contingency system with groups of children for the purpose of increasing academic performance. It was found in a fourth-grade class that the spelling performance improved significantly when reinforced with free time and the privilege of listening to the radio. Salzberg, Wheles, Divar, and Hopkins (1971) found that the accuracy of printing by kindergarten children could be improved beyond baseline conditions when access to play was contingent upon performance.

Contingency management in the university classroom is another application of operant behavior technique. Like contingency management systems used in elementary schools, the programs for college students also involved a response and a subsequent reinforcement. The responses which were selected depended upon which target behaviors the instructor had sought to instill in his students. Ferster (1968) stressed verbal fluency, while McMichael and Corey (1969) and Lloyd and Knutzen (1969) designed their courses so that students experienced those behaviors most frequently engaged in by professionals in their field.

Contingency management has moved beyond the point where it refers only to the use of high probability events

to reinforce low probability behaviors. It now includes token systems, point systems, and the use of grades as backup reinforcers in educational settings.

Fast (1971) suggested a contingency contracting system for high school students. The activity was bowling. The backup reinforcer was the grading system. The contingencies in this system were stated in terms of points. The micro-contract in this case was the contingencies involving the number of points needed to earn the various grades. In this contract system grading is based primarily on quantity or work output while quality of work is held constant.

The primary backup reinforcer in college contingency management system has been the final grade. However, since this reinforcement is delayed for such a long time, most of the courses have been divided into smaller parts so that the student can be reinforced frequently. Keller (1968) and McMichael and Corey (1969) have done this by dividing the course into smaller units. The final grade is then dependent on the number of units passed. Lloyd and Knutzen (1969) designed their psychology course on a point system. Points were earned by successfully completing small assignments.

There is a paucity of information regarding the use of contingency management procedures in physical

education settings. However, Libb and Clements (1969) successfully controlled exercise behavior by application of reinforcement procedures. Also, Rushall and Pettinger (1969) shaped skilled motor behavior in a swimmer by using feedback as the reinforcer. The amount of work volume accomplished during swimming practices has been increased by Rushall and Pettinger (1969) by applying different reinforcement procedures. For swimmers age 12 and under, candy and money were found to be more effective reinforcers than praise from the coach. No difference in reinforcement procedures was found for those 13 to 15 years of age. McKenzie and Rushall (1969) also increased work volume during swimming practice by using program boards on which the swimmers recorded the number of laps they had swum for different performance tasks.

Studies employing contingency management procedures have been done using numerous types of subjects in several different environmental settings. The research shows that behavior can be successfully modified in students of all ages. It is especially significant, in terms of the study, that college courses taught by the contingency method have achieved a higher level of academic mastery and have been enjoyed by the students more than courses taught in the conventional manner. Evidence also supports

the theory that the learning of skilled motor behavior can be increased with the use of this technique.

Studies Related to Traditional Instruction

The traditional style of instruction has been used down through the years as a means of "transmitting cognitive (factual) data from a teacher to a group of students" (Broadwell, 1980, p. 3). It is direct and task oriented; there is little concern for those behaviors that are difficult to identify and measure. When specific information or skills are end objectives, and especially when time is limited, teachers have tended to take more control over the student's learning experiences and to use formal teaching approaches.

The second important component of the traditional style is that of the demonstration. For those who believe that children want to be shown the way, the correct standard is a vital tool of teaching, control, and evaluation of achievement. While a teacher is illustrating, the student must observe. Repeating the demonstration model is a common imperative in learning, and it keeps the learner under control.

"Many physical education teachers and coaches employ drill (Behavioristic) techniques" (Singer & Dick, 1974, p. 35). Classes can be organized easily. The instructor encourages all students to respond to certain cues

together and in the same way--by the numbers. Responses become habitual, and a form of learning is demonstrated.

Most research studies on teaching styles have been directed toward the comparisons of traditional (command) with task and/or individual program styles. The task style involves explanation and/or demonstration from the teacher, followed by practices of the tasks by the students individually. The student moves from task to task, usually progressing from the simple to the complex, at his own rate, with evaluation coming from the teacher. In the individual program style, the teacher selects and organizes the subject matter, and the student designs his/her own program of the matter in relation to when, where, how much, how well, and so on. Mosston (1966, 1981) writes on this style that it is a design of subject matter manipulated in such a manner as to provide the learner with full opportunity for self-motivated learning, self-assessment, and decision making over a relatively prolonged period of time. Evaluation in the individual program style comes from the student.

Neuman and Singer (1968) compared the effectiveness of the traditional and programmed styles of teaching for learning tennis skills. The results of the study were: (1) no significant difference in the general skill level of the groups, as measured by the Hewitt revised Dyer

Backboard Tennis test and a single elimination tournament; (2) the traditional subgroup showed significant improvement within its group for general skills while the programmed subgroup did not; and (3) the programmed group received better subjective rating scores, as rated by five evaluators. The investigators concluded that both methods were equally effective for learning beginning tennis skills.

Marian (1970) compared the effectiveness of the command style and the task style of teaching the forehand and backhand tennis strokes. The subjects were given tennis instruction for two hours a week for six weeks, one group by each method. A pretest was administered at the beginning of the course and a final test at the conclusion. The results revealed (1) the task method was superior to the command method in teaching the backhand stroke, and (2) there was no significant difference between the two methods in teaching the forehand stroke.

In 1972, Boschee conducted a study to compare the effects of command, task, and individual program styles of teaching as they affect specific skills in alley soccer. The subjects for this study were 221 fifth-grade boys and girls from three elementary schools. The major findings of his study were: (1) the experimental styles of teaching were not significantly different from one

another in terms of overall improvement between the pre- and post-battery of skills tests; (2) a significant difference was indicated between the task and individual program styles of teaching on the pre- and post-game knowledge test; (3) the experimental styles of teaching used were not significantly different from one another in terms of overall improvement between the pre- and post-personal adjustment test scores; and (4) the experimental styles were not different from one another in terms of overall improvement between the pre- and post-social adjustment test scores.

Barton (1973) compared the effects of command and individual program styles of teaching on the learning of beginning basketball skills. Her findings revealed a significant difference between means of the posttest for only one of the nine items. She concluded, therefore, that the individual and command styles of instruction were similarly effective.

Two studies which compared the traditional style of teaching to styles other than the task or individualized program were conducted by Engram (1970) and Croom (1972). Engram (1970) compared the traditional style and the movement exploration style for teaching synchronized swimming skills to two groups of matched swimmers. The results of the study revealed no significant differences

in the quality or rate of learning the synchronized skills with the exception of the ballet leg skill.

Croom (1972) compared the effectiveness of the traditional style and movement exploration style of teaching movement fundamentals upon general motor ability. The subjects were 100 freshman women from four nonmajor skills classes. The Scott Motor Ability Test was used for the pre- and posttests. Croom's results revealed a difference between posttest composite means, with the traditional style being more effective.

Chapter 2

Method

Subjects

The subjects in this study were 54 male and female students enrolled in three volleyball activity classes taught at Middle Tennessee State University during the spring semester of the 1986-87 academic year. Their ages ranged between 18 and 34 years with a mean age of 20 years. The three instructional groups--traditional, reciprocal, and contingency management--were composed of 22, 17, and 15 subjects, respectively. The traditional and reciprocal instruction classes met Tuesday and Thursday at 9:25 a.m. and 10:50 a.m., respectively. The contingency management instruction class met on Monday and Wednesday at 9:00 a.m. All classes were conducted in Murphy Center. The center has an indoor arena with an upper level track. The track floor has several well-marked tennis and volleyball courts. The two courts used provided adequate space above and around for students to practice all skills. All classes were taught by the investigator.

Testing Instruments

The investigator experienced great difficulty in finding tests that would be appropriate for use in this

study. Most tests were rejected for the following reasons: (1) lack of information regarding reliability and validity, (2) the administration would not be feasible, or (3) the tests would not measure skills permitted by current rules.

After careful review of the literature, the following instruments were selected for use in this study: (1) American Alliance of Health, Physical Education, Recreation, and Dance (AAHPERD) Passing Test, (2) AAHPERED Set-Up Test, and (3) AAHPERED Serving Test. These tests were developed under the guidance of a skill test committee appointed by the Board of Directors, the American Association of Health, Physical Education, and Recreation (Neilson & Jensen, 1972). According to Johnson and Nelson (1974), in the criteria for the AAHPERD Sports Skills Test Project, the reliability coefficients should not be less than .80 on events scored on distance and not less than .70 for events scored on the basis of accuracy and form. They further state that face validity was accepted. Based on this information, this investigator assumed that these three tests have reliability coefficients of at least .70 and face validity. The purpose of the Passing Test was to measure the player's skill in passing a volleyball from the rear of the court toward the net. The purpose of the Set-Up Test was to

measure the player's ability to set-up the ball near the net. The purpose of the Serving Test was to measure the player's ability to serve the ball over the net (Johnson & Nelson, 1986).

Procedures

All instruction and testing was conducted or supervised by the investigator. The three groups under study were given the same basic instruction at the beginning of each class according to the lesson plan for the day. This was done to provide each class with the same information. The track area contained two volleyball courts marked so that both courts could be used simultaneously. One court was set up for game play while the other was used for practice and testing.

During the first class meeting, the following background data were obtained from all subjects: name, age, classification, college physical education courses completed, amount of volleyball experience, and their reason for selecting a volleyball activity class. An explanation of the research was read to all students. Each student was informed that he or she could be eliminated from the study for the following reasons: (1) varsity or club volleyball team experience, (2) failure to take either the pretest or posttest or any intervening tests administered during the study,

and (3) missing two or more class meetings. During the second, third, and fourth class meetings, pretests on setting, passing, and serving were administered to each group. Posttests were administered during the twenty-sixth, twenty-seventh, twenty-eighth, and twenty-ninth class meetings. All testing was done under similar conditions for all subjects.

During the fifth through the twenty-fifth class meeting, the three classes received three different instructional treatments. The traditional instruction class consisted of lectures, demonstration by the teacher, practice, drills, and game play.

The reciprocal instruction class consisted of explanation, demonstration of the tasks, followed by student practice in groups of two. One student performed the task while the other student provided corrections, criticism, or praise. Corrections by the teacher, essential for maintaining the quality of the tasks, were channeled through the instructing partner. These corrections were prompted either by inquiries from the instructing partner or from the teacher's observation of repeated incorrect movements of the volleyball partner. The students selected their own partners during the fifth class meeting.

The contingency management class consisted of explanation, demonstration by the teacher, individual practice by the student utilizing a list of performance practice tasks involving skill, and playing in the game situation. This method emphasized individual practice, self-paced progress of each individual, and the necessity of performing at a designated level of skill in order to pass a performance task. One court was utilized as the practice and performance task testing area while the other was used for game play. After the basic skills of serving, setting, and passing were taught, game rules and methods were presented. At this point, the class was divided into half. One half of the group worked on practice tasks and performance task tests while the other half worked on game skills. When the class period was half over, the two groups switched courts.

Since this study was designed to investigate the effectiveness of selected teaching styles on the improvement of three specific skills consisting of the pass, set-up, and serve, skills tests were used to assess the entering and existing behavior in each of these areas. The tests used in this study were: (1) AAHPERD Set-Up Test, (2) AAHPERD Passing Test, and (3) AAHPERD Serve Test. Data obtained from the pretests and posttests were analyzed to ascertain the improvement within and among the

three groups being studied in the areas of (1) passing ability, (2) setting ability, and (3) serving ability.

Statistical Treatment

The .05 level was utilized to determine significance for all statistical analysis conducted. Preliminary analyses for homogeneity among the three groups in the skills of serving, passing, and setting were performed through the use of a series of three one-way analyses of variance (ANOVAs) comparing the pretreatment scores of the three groups. No significant difference was revealed in either the serving, setting, or passing ability.

Because homogeneity for all skills was established in the preliminary analysis, traditional one-way ANOVAs were conducted to analyze the posttreatment scores. When the ANOVAs revealed a significant difference among the three groups, Scheffé's test was utilized to determine where the significance existed. To determine if there were a significant improvement within each group in each skill, students' t tests were computed.

Chapter 3

Results

The purpose of this chapter was to report the results of the statistical analyses performed on the data collected relative to improvement in selected volleyball skills as determined by performance scores on three skills tests. For each participant in each of three groups, pretreatment scores (see Appendix A) were collected on three selected volleyball skills: (1) serving, (2) passing, and (3) setting. The three groups were subjected to three types of treatment: (1) traditional instruction, (2) reciprocal instruction, and (3) contingency management instruction.

Since the groups were composed of intact classes predetermined by patterns of registration rather than being randomly assigned, it was necessary to test for homogeneity among the groups. The mean pretreatment scores on each skill for each group are shown in Table 1. The preliminary analysis for homogeneity consisted of three one-way analysis of variance (ANOVAs), comparing pretreatment scores of the three groups of participants on the three abilities previously mentioned. The appropriate analysis of variance method as suggested by Rothstein (1985) was used.

Table 1

Group Means for Pretreatment Scores of Three Volleyball
Skills

	Contingency		
	Traditional	Reciprocal	Management
Skills	Instruction	Instruction	Instruction
Serving	16.45	16.12	14.07
Passing	3.14	3.35	3.33
Setting	2.86	3.35	2.33

The results of the preliminary analysis showed no significant differences in pretreatment performance scores of the three groups. Summary ANOVAs of the preliminary analyses are shown in Tables 2, 3, and 4.

Because homogeneity was established for the three skills of serving, setting, and passing, traditional one-way ANOVAs were utilized in analyzing the posttreatment scores of these skills. The mean posttreatment scores on each skill for each group are shown in Table 5.

The ANOVA on passing ability posttreatment scores (see Table 6) revealed no significant differences among the three groups relative to the treatments used.

The ANOVA on the serving ability posttreatment scores is found in Table 7. A significant difference among groups ($F = 7.067$, $p < .05$) was found.

Table 8 contains the ANOVA summary for the setting posttreatment scores. A significant difference ($F = 9.28$, $p < .05$) was revealed among the three groups as a result of the treatments used.

After a significant difference was found among the three groups on the skills of serving and setting, it became necessary to determine where these differences existed. Therefore, a posteriori tests were utilized to compare the three groups. Of the several methods available, Scheffé's test was chosen to reveal specific

Table 2

Analysis of Variance for Serving Pretreatment Scores of
Three Groups

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Total	2,917.65	53		
Between	55.50	2	22.75	
Within	2,862.15	51	56.12	.405*

* $p < .05 = 3.18$

Table 3

Analysis of Variance for Passing Pretreatment Scores of
Three Groups

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Total	466.37	53		
Between	.56	2	.28	.031*
Within	465.80	51	9.13	

* $p < .05 = 3.18$

Table 4

Analysis of Variance for Setting Pretreatment Scores of
Three Groups

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Total	358.09	53		
Between	8.29	2	4.14	.06*
Within	349.81	51	6.86	

*p < .05 = 3.18

Table 5

Group Means for Posttreatment Scores of Three Volleyball Skills

			Contingency
	Traditional	Reciprocal	Management
Skills	Instruction	Instruction	Instruction
Serving	21.59	21.82	15.27
Passing	3.50	4.28	3.34
Setting	4.73	8.23	6.40

Table 6

Analysis of Variance for Passing Posttreatment Scores of
Three Groups

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Total	408.09	53		
Between	22.79	2	11.39	1.51*
Within	385.30	51	7.56	

* $p < .05 = 3.18$

Table 7

Analysis of Variance for Serving Posttreatment Scores of
Three Groups

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Total	2,062.54	53		
Between	447.81	2	223.75	7.07*
Within	1,614.72	51	31.66	

* $p < .05 = 3.18$

Table 8

Analysis of Variance for Setting Posttreatment Scores of
Three Groups

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Total	443.26	53		
Between	118.24	2	59.12	9.28*
Within	325.02	51	6.37	

* $p < .05 = 3.18$

significantly different means, since it is recognized as being most conservative; that is, yielding the smallest number of significant differences. The results of the Scheffé tests on the serving skill revealed no significant difference between the traditional instruction and reciprocal instruction groups, no significant difference between traditional instruction and contingency management groups, and a significant difference between the reciprocal and contingency management groups. The traditional and reciprocal instruction groups yielded significantly higher scores than the group using contingency management style instruction.

The results of the Scheffé tests on the setting skill revealed no significant difference between traditional and contingency management groups, no significant difference between reciprocal and contingency management groups, but a significant difference between traditional and reciprocal instruction groups. The group using reciprocal style instruction yielded significantly higher scores than the group using traditional style instruction.

Graphic illustrations of the means for the pretreatment scores for each group for each test are depicted in Figures 1, 2, and 3. These graphs revealed that there were mean score improvements by each group on each skill from the pretreatment period to the

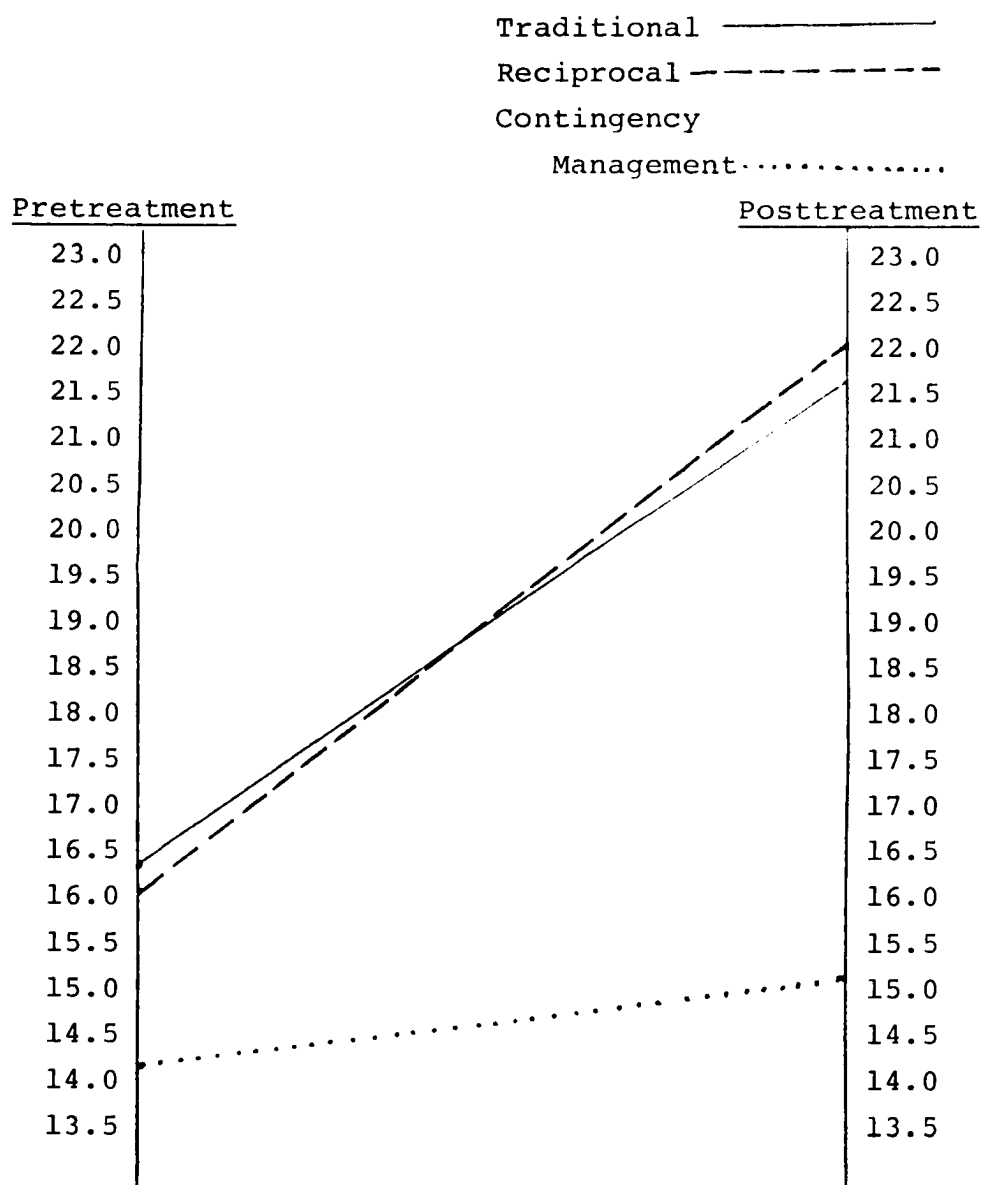


Figure 1. Comparison of mean scores on pretreatment and posttreatment serving skill tests for traditional, reciprocal, and contingency management instruction.

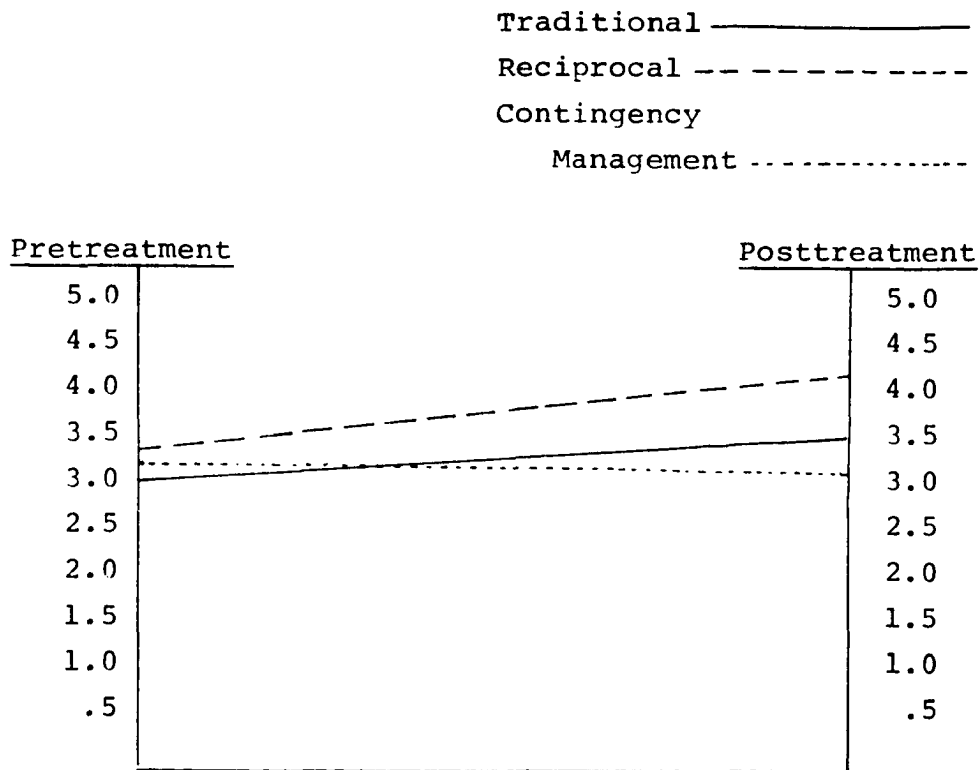


Figure 2. Comparison of mean scores on pretreatment and posttreatment passing skill tests for traditional, reciprocal, and contingency management instruction.

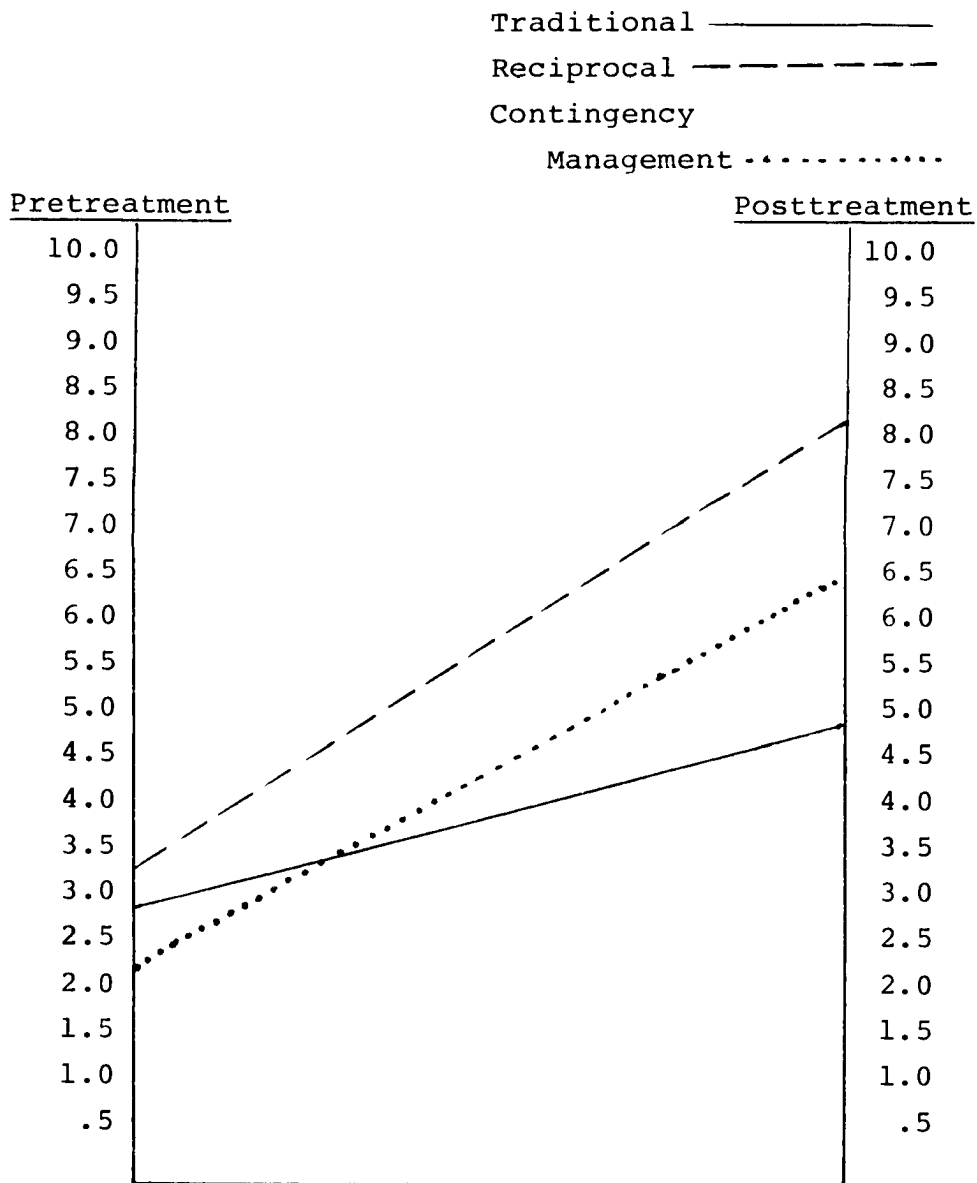


Figure 3. Comparison of mean scores on pretreatment and posttreatment setting skill tests for traditional, reciprocal, and contingency management instruction.

posttreatment period. In order to determine if these mean gains were significant, t tests were run on each skill for each group. The t tests for improvement on the three skills for traditional reciprocal, and contingency management instruction groups are shown in Tables 9, 10, and 11, respectively. These tables show that significant improvement occurred in the skills of serving and setting during the 14-week instructional period.

Table 9

t Values for Improvement in Three Volleyball Skills for
Traditional Instruction

Skills	Sum of D	Sum of D ²	<u>t</u>
Serving	121	1,819	3.59
Passing	8	178	.60
Setting	41	191	3.79

t for p < .05 = 2.080; n = 22

Table 10

t Values for Improvement in Three Volleyball Skills for
Reciprocal Instruction

Skills	Sum of D	Sum of D ²	<u>t</u>
Serving	97	1,165	3.93
Passing	25	237	.56
Setting	83	535	7.28

t for p < .05 = 2.120; n = 17

Table 11

t Values for Improvement in Three Volleyball Skills for
Contingency Management Instruction

Skills	Sum of D	Sum of D ²	<u>t</u>
Serving	18	806	.64
Passing	14	216	.27
Setting	83	367	4.73

t for p \angle .05 = 2.145; n = 15

Chapter 4

Discussion

Generally, within the scope of this study, it appears as if the style of instruction has affected the improvement in the skills of serving and setting. According to the results of this study, improvement in the ability to serve and set is greater when using reciprocal and traditional instruction than when using contingency management style instruction.

When the relationship between the three styles is examined, reasons for these results can perhaps be observed. As the literature identified, the traditional style of instruction is very teacher centered, has been around for as long as learning, and is therefore a style to which a great many students have been exposed. Since the students are accustomed to this type of information being given and received, learning is perhaps easily facilitated.

In the reciprocal style of instruction, the relationship is on a one-to-one basis. As research has indicated, the interpersonal interaction which results from the paired groups has been shown to lead to better learning and increased retention. This study only helps

to support this conclusion, based on the results in the skills of serving and setting in volleyball.

Contingency management instruction leaves a great deal of the learning up to the individual through the use of practice and performance tasks, and this results in the final grade. This form of instruction has been used successfully in many such college courses as psychology, physics, and chemistry. The literature as it pertains to the development of motor skills shows that the contingency management instruction system was not significantly better in the quality of motor skill development than any other form of instruction. The results of this study appear to support this conclusion.

An interesting observation is found in the results on the skill of passing. Although improvement is noticed in the mean scores, not one of the instructional approaches is significantly better than another. What could possibly be the reason? It is not the purpose of this study to find out why one approach may or may not be more effective than another, but questions such as this do arise because of the outcome. These results may have been caused in part by such factors as the number in the experimental groups, the enthusiasm of the instructor, class interest, lack of or greater motivation on the part of subjects and instructor, and differences in effort among the groups while performing the skills tests. While it is true

that the class with 17 subjects did perform significantly better in the skills of serving and setting, and the group with 22 subjects performed significantly better on the skill of serving, why did this not hold true for the skill of passing? The same questions apply to such aspects as motivation, class interest, instructor enthusiasm, and other factors previously mentioned.

Since very little research has been conducted relative to the acquisition and improvement of fundamental volleyball skills, more specifically, relative to instructional approaches used in teaching volleyball skills, it is difficult to support or to disagree with findings relative to the effectiveness of these instructional styles in teaching the fundamental skills of volleyball. In the review of the literature, the studies cited related to motor skill acquisition revealed a significance in the quantity of learning, whereas the quality of those skills learned is not addressed. This study was concerned with the acquisition of three fundamental volleyball skills. Skills tests were selected that required quality performance in order to achieve positive results. The outcome indicates that the use of reciprocal instruction resulted in significant gains in serving and setting, while traditional instruction showed significant gains in the skill of serving. No significant

gains are shown when using the contingency management instructional style.

Findings

The findings of this study revealed the following:

1. There were no significant differences in general volleyball ability among the three groups based on the initial test data.
2. There were no significant differences among the experimental treatments for increasing mean skill performance of passing.
3. There was a significant difference in mean serving skill performance as a result of the experimental treatments. A significant difference was revealed between traditional and contingency management instruction, and a significant difference between reciprocal instruction and contingency management. The groups utilizing traditional and reciprocal instruction made greater gains in mean serving skill performance than the group utilizing contingency management.
4. There was a significant difference in mean setting skill performance as a result of the experimental treatments. A significant difference was revealed between traditional and reciprocal instruction. The group utilizing reciprocal style made greater gains in mean setting skill performance than the group utilizing traditional style instruction.

Conclusions

The overall findings indicate that no particular instructional style (treatment) used in this study is more effective than another in teaching the fundamental skills of volleyball except in the skill of setting and serving. Improvement in setting ability is significantly greater when a reciprocal style of teaching the skill of setting is used than when either a traditional or contingency style is used. Improvement in serving ability is significantly greater in the use of both a traditional and reciprocal style of teaching than in the use of a contingency management style.

Recommendations

Based on the findings and limitations of this study, the following recommendations are made:

1. The skills of serving and setting should be investigated further regarding the uses of both traditional and reciprocal styles of instruction.
2. An analogous study should be made utilizing high school students to determine whether one instructional style is more effective than another on the secondary level.
3. A study should be conducted to ascertain whether a student improves more in the fundamental skills of volleyball in a coeducational or noncoeducational setting.

Appendixes

Appendix A

Raw Data

Raw Data
Pretreatment and Posttreatment Test Scores
for Traditional Instruction

Subject	Serving		Passing		Setting	
	Pre	Post	Pre	Post	Pre	Post
1	18	19	1	4	1	4
2	5	12	1	0	0	3
3	21	15	3	5	0	3
4	20	25	4	2	6	5
5	19	15	2	4	5	5
6	21	29	5	2	6	7
7	9	29	5	4	3	7
8	24	21	7	4	4	8
9	15	19	7	1	0	1
10	22	25	2	1	1	4
11	10	19	3	0	0	0
12	8	25	3	5	0	5
13	12	17	3	1	1	8
14	26	26	0	1	6	5
15	14	20	1	5	0	2
16	8	18	6	8	2	6
17	16	36	5	5	6	7
18	24	18	0	6	4	5
19	9	18	0	0	3	2
20	21	20	1	4	1	3
21	18	19	3	7	6	9
22	22	30	7	8	8	5

Raw Data
 Pretreatment and Posttreatment Test Scores
 for Reciprocal Instruction

Subject	Serving		Passing		Setting	
	Pre	Post	Pre	Post	Pre	Post
1	8	14	0	0	0	7
2	12	16	1	2	3	6
3	16	22	1	8	6	9
4	14	25	6	4	7	11
5	32	20	6	2	4	6
6	12	16	0	2	4	4
7	25	28	4	7	5	9
8	2	22	4	5	2	8
9	17	28	0	7	0	12
10	22	26	3	5	9	11
11	12	25	0	7	1	8
12	14	21	5	3	0	7
13	1	16	0	5	1	6
14	20	17	3	4	3	11
15	23	26	12	14	3	9
16	26	19	3	2	3	6
17	18	30	9	5	6	10

Raw Data
 Pretreatment and Posttreatment Test Scores
 for Contingency Management Instruction

Subject	Serving		Passing		Setting	
	Pre	Post	Pre	Post	Pre	Post
1	16	17	9	2	9	4
2	11	14	0	1	0	1
3	21	13	4	6	8	9
4	3	23	4	4	5	9
5	12	17	2	5	7	12
6	17	15	0	7	0	6
7	11	7	2	1	0	5
8	2	7	0	3	0	2
9	24	18	7	4	3	9
10	28	22	7	0	1	8
11	6	14	9	8	1	8
12	20	16	1	4	2	5
13	2	9	0	1	3	6
14	15	9	0	3	0	4
15	23	28	5	1	2	8

Appendix B
Test Descriptions and Diagrams

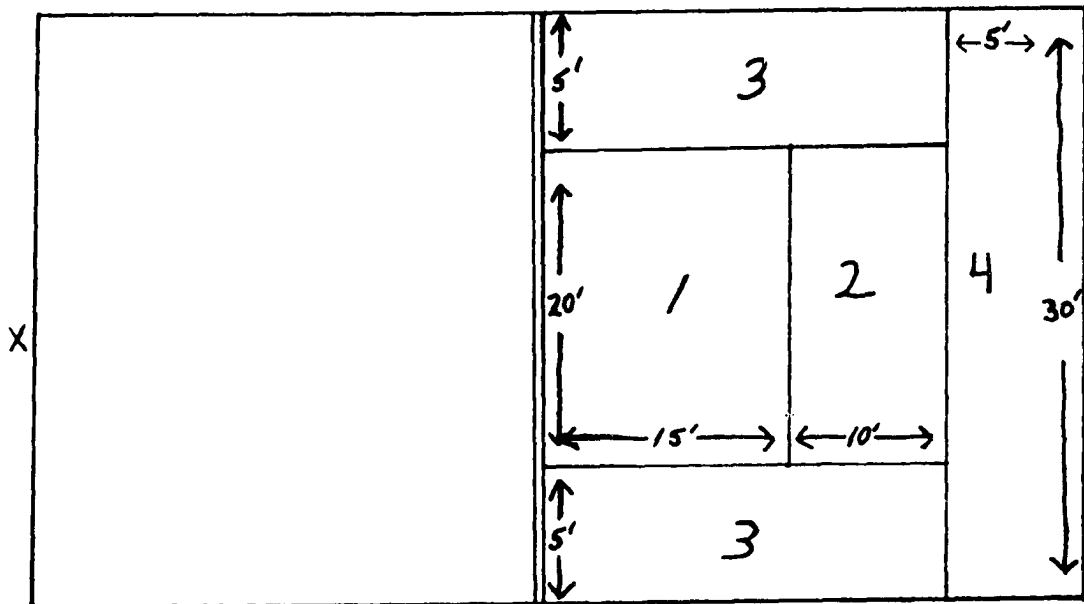
AAHPERD Serving Test

Purpose: To measure the player's ability to serve the volleyball from the rear of the court over the net.

Equipment: Volleyballs, volleyball net and standards, masking tape or chalk to mark areas on the floor, score cards, and pencils.

Procedure: Server T (person being tested) stands at X and serves across the net. The server is given 10 trials. The trial counts, but no points are recorded if the ball touches the net or does not fall onto a target area.

Scoring: The score is the total points made according to the value of the zone in which the serve lands. When any ball lands on a line separating two zone areas, the score is the greater of the two zone values.



AAHPERD Serving Test Diagram

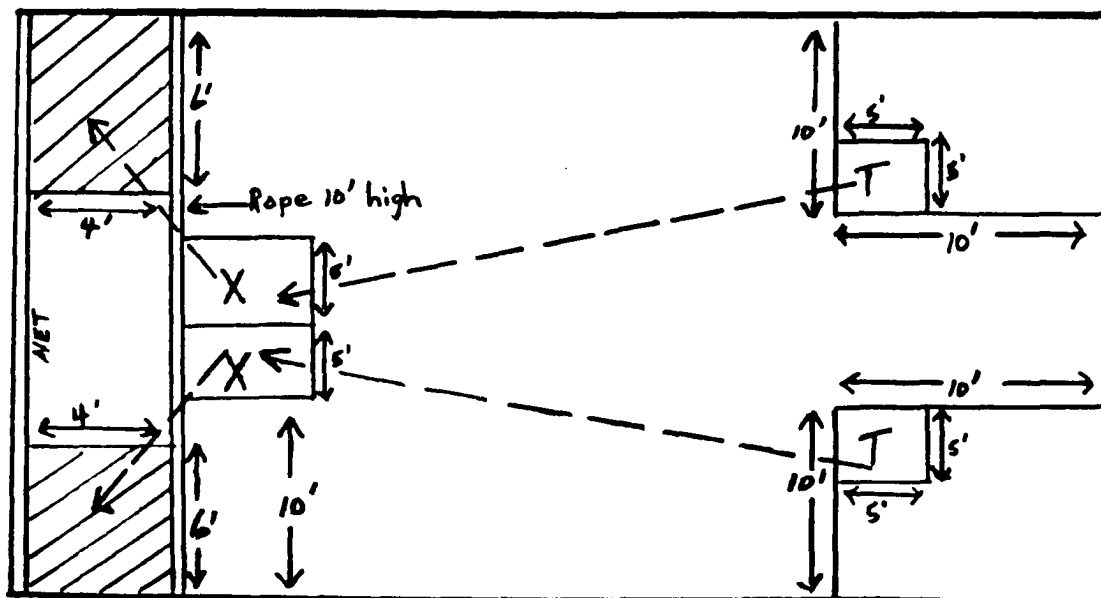
AAHPERD Set-Up Test

Purpose: To measure the player's ability to set-up the volleyball toward the net.

Equipment: Volleyballs, volleyball net and standards, 4-ft. x 6-ft. mats or marked areas on floor, 30-ft. rope and two standards 10-ft. high, masking tape or chalk for marking floor areas, score cards, and pencils.

Procedures: Set-up man X (person being tested) stands in midcourt position within the 6-ft. x 5-ft. area. He receives a high throw (similar to a two-hand basketball shot) from thrower T, and executes a set-up so that it goes over the rope onto a target area. Throws from T that do not fall into the 6-ft. x 5-ft. area are to be repeated. The set-up man has 10 trials to the right and 10 to the left. The trial counts, but no points are recorded if the ball touches the rope or net or does not fall on a target area.

Scoring: One point is scored for each set-up that goes over the rope and lands on or hits any part of the target area (including lines), with 20 maximum.



AAHPERD Set-Up Test Diagram

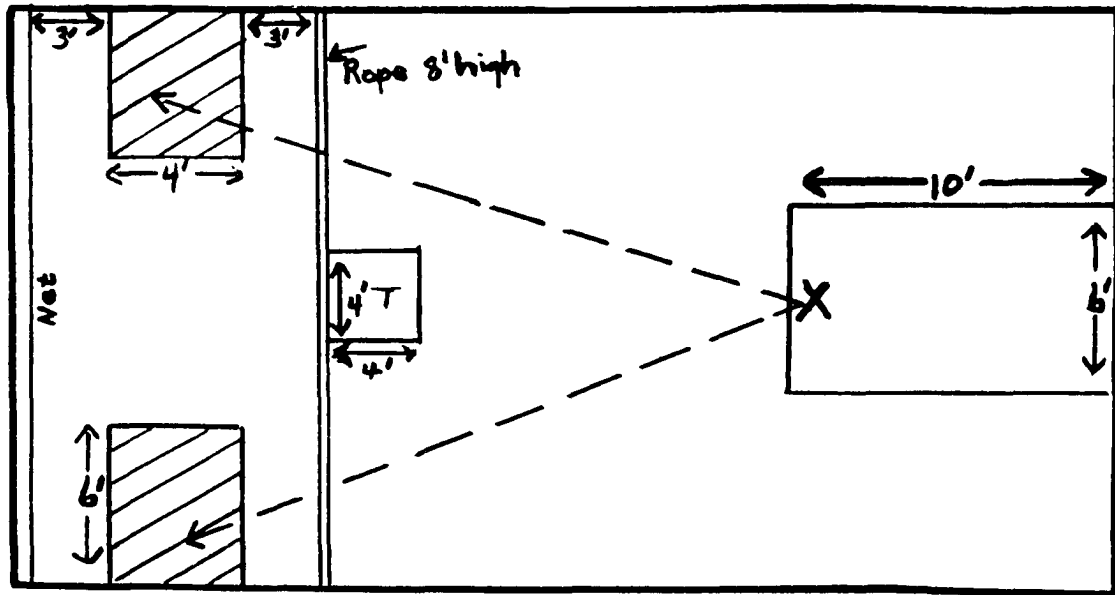
AAHPERD Passing Test

Purpose: To measure the player's skill in passing a volleyball from the rear of the court toward the net.

Equipment: Volleyballs, volleyball net and standards, 4-ft. x 6-ft. mats or marked areas on floor, 30-ft. rope and two standards 8-ft. high, masking tape or chalk to mark areas on the floor, score cards, and pencils.

Procedure: Passer X (person being tested) stands in the center back position of the court, receives a high throw (similar to a two-hand basketball shot) from thrower T, and executes a pass so that it goes over the rope and onto the mat or marked areas. The passer is given 20 trials performed alternately to the right and to the left. The trial counts, but no points are recorded if the ball touches the rope or net or does not fall onto a target area. Throws from T that do not fall into the 6-ft. x 10-ft. area are to be repeated.

Scoring: One point is scored for each pass going over the rope and landing on or hitting any part of the targeted area (including lines), with 20 the maximum.



AAHPERD Passing Test Diagram

Appendix C
Contingency Management Instructional Package

STUDENT COURSE SYLLABUS

I. Course: Volleyball Number: 227 Department: HPERS
Instructor: Barbara Norris Office Phone: 898-2147
Office Location: MC 113 Office Hrs: M-TH 8:00-9:00

This is one of three volleyball sections being used in a research study concerning teaching methods. Your class is being taught using the contingency method. A list of skill performance tasks will be given to you. The tasks are listed in order from easy to more difficult. After the instructor has explained and shown you how to do a particular skill, such as the set, you will be allowed to practice that skill on your own, using the list of tasks to guide you. If you pass the test, the teacher will record it and you may then begin practicing for the next task. If you fail to pass the test, you may go practice it and try to pass it again at a later time. The instructor will allow you to try to pass the task as many times as you wish. There is no penalty for not passing a task. Anytime you feel you are not improving your skill, ask the instructor to help you.

You are required to attend each class meeting. You will be permitted two unexcused absences. You will also be given an appointment time during one of the last three class meetings and will be required to be present at that

time. You must attend your appointment time in order to receive a grade for the course. Should there be extreme extenuating circumstances, such as a broken leg or a long-term illness, that make it impossible for you to meet these attendance requirements, contact your instructor immediately. In an extreme case, the instructor may waive the attendance requirement for you. However, in that case you would have to be dropped from the study, though it would not lower the grade which you had earned. One other requirement of this course is to take two written exams. One exam will cover volleyball terms, the other will cover rules and scoring. You must pass with a score of 85% or better. If you do not attain this score the first time, you will be allowed to take alternate versions of the test until you do attain a score of 85%. If you meet the attendance and knowledge test requirements, your final grade will be determined by the number of tasks that you have passed by April 24, 1987.

The grading scale below will be used:

A = 13-15

B = 11-12

C = 9-10

D = 7-8

F = 6 and below

EXPLANATION OF SKILLS

The Overhead Volley

The basic ball-handling skill in the game of volleyball is the overhead volley. The type of volley to be used at a particular time in the game depends upon the demands of the situation. In passing and setting the ball, the skilled player will concentrate almost exclusively on the overhead volley or one of its modifications, and the beginning player should be encouraged to do the same.

Body Position. As the player moves to be ready to use the overhead volley in passing the ball, he/she should assume a position in which the balls of both feet equally support the weight of the body. The heels are kept in contact with the court surface, but the player must not allow any of his/her body weight to settle back onto the heels. Both feet should be pointed in the direction of the intended play. The legs will be separated with the knees slightly flexed. One foot is forward, usually the left foot in the right-handed player, so that the basic position of the feet and legs resembles the familiar forward-stride position used in many sports. The trunk of the body should tilt slightly forward.

The elbows should be held slightly to the front of the body and in alignment with the shoulders. The hands

are placed approximately chest high with the thumbs pointed toward each other, almost touching, forming a triangle. The wrists are flexed and are extended backward so that the palms of the hands are upward from the floor. The fingers are spread wide and, with the palms and the heels of the hands, are capable of forming a secure resting place for the ball.

The position of the head and neck is regulated by the flight pattern of the ball. A descriptive guide to follow is to let the ball fall toward the upturned face, with the eyes never leaving their concentration on the flight pattern until contact can be made just before the ball would strike the nose.

The Action. As the ball approaches, the extended arms are withdrawn, following the ball into the body until it reaches the face level. At that point, there is a complete extension of the arms and throughout the body. All eight fingers and the two thumbs should contact the ball simultaneously, making a definite and clean rebound from the fleshy pads near the ends of the fingers and thumbs. The wrists extended to a maximum in line with the forearms and arms, accompanied by a rotation of the wrists and hands inward. From the forward tilting position, the body extends so that a slight arch forms in the back. The knees straighten, and there is a forward and inward shift of body weight behind the ball.

The Set

The set is the second contact of the ball and the objective of this volley is to get the ball from the setter to the spiker in such a way that he/she can spike it in the most effective manner. As the second of the three contacts that a team has with the ball on its side of the court, the set holds the attack together.

Body Position and Action. The basic body position and action of the set is the same as for the overhead pass. However, there should be additional stress on playing the ball above the face. Emphasis by the player should be to look through the triangle formed by the fingers and thumbs on his/her two hands as he/she plays the ball. A second emphasis should be on getting more arch in the back as the ball is contacted so that there is more power involved and a better chance for the desirable high volley.

The Bump Pass

The bump pass in volleyball describes the action used in playing the ball below chest height while utilizing both arms and clenched fists. There are two distinct play situations in which the bump pass is employed: serve reception and when the ball never gains sufficient height to be fielded by the player above chest height. Beginning players should begin to receive as many serves as possible

by this method and, as skill increases, should attempt all serve reception by utilizing the bump pass.

Body Position. Feet should be planted parallel, with the weight on the balls of the feet and the knees fairly deeply flexed, possibly as much as 90 degrees. If no movement of the feet is possible, the ball may be played at the side of the body by turning at the waist and flexing the knees.

Your hands may be clenched or joined in several ways. The most common method is by making a fist with your left hand with your thumb on top. The right hand then encircles your left so that your thumbs are parallel and touching. Since the ball will be contacted most often by your wrists or forearms, it is important to have correct arm position. Hold your arms as close together as possible, with the elbows straight and rotated inward. Try to make as flat and wide a surface as possible from thumbs to upper arms. Pointing your thumbs at the floor will help ensure a correct straight arm position.

The Action. As the ball approaches, watch it until contact is made with the wrist or forearm. Again the legs provide the initial movement to provide force to start the ball up and away. Since the rebounding momentum of the ball off the forearms will provide force of its own, the only action necessary by your arms is a lifting action.

An upward flowing motion of legs, shoulders, and hips as the ball is contacted is desirable. The arms should be straight at the elbow at the moment of contact and the force provided by the legs.

The Spike

There is probably no more exciting play in power volleyball, for spectator or player, than the basic offensive weapon of the game, the hard driven spike. The skill of spiking is perhaps one of the more difficult sport skills to master because of the need to effectively execute and time the jump and proper arm action with the descent of the ball into the spiking area. The players on the offensive team at the left front and right front positions should always anticipate that the ball may be set into the spiking area and should be prepared to spike the set if it comes.

Body Position and Action. When the ball comes across the net into your court, you must move rapidly back from the net, 8 to 10 feet, and be alert for a set into your spiking zone. If the ball is set to you, make any necessary adjustments of a lateral nature before you start toward the net to contact the ball. The straight-in approach is necessary in order to provide a wide variety of shots and complete the proper recovery after spiking. The number of steps taken during the straight-in approach

varies from player to player, but three or four steps would seem to be the average. Remember that the approach is important only to establish your position for the take-off and to convert your forward momentum to upward momentum.

Take-off with both feet from a balanced, nearly full crouch position slightly behind the ball's path as it descends into the spiking zone. As you jump, thrust both arms violently upward to a fully extended position. You must be careful to jump as straight up as possible and not contact the net at any time during the spike.

When you near the height of your jump, bring your hitting hand and arm to a cocked position, with the hand behind the head and the elbow to the outside and at shoulder height. The hand is open and relaxed and the wrist is hyperextended. Try to contact the ball at the highest plane possible by extending the arm and hand in a striking motion. Keep the ball between you and the net and be sure that you contact the ball above its center of gravity with the open hand. Snap the hand and fingers forward and through the ball in order to direct the hitting force of the hand and arm in a downward direction.

The proper follow-through of body segments after the execution of a spike is simply that of bringing the body and hitting arm under control to ensure a balanced landing

on both feet. The momentum of the hitting arm should be halted as soon after contact as possible in order to keep from following through into the net.

The Serve

The rules of the serve are the same for each type of serve to be considered. You, as a server, must be within three meters of the right boundary line and behind the rear service line. You may not contact the back service line on the court until after the ball has been struck by the hand, fist, or arm. To be a legal serve, the ball must not contact the net and either be played by an opponent or land inside the opponent's court. All boundary lines are considered "inbounds" in volleyball.

The Underhand Serve

Body Position. Stand facing the net with your feet staggered about toe to heel, with the foot opposite your serving hand forward. Bend forward slightly at the waist and place most of your weight on your rear foot. Hold the ball in the palm of your nonserving hand, with the arm fairly straight and extended across your body, to a point directly in front of your hitting hand. Address the ball with your hitting hand, palm toward the net. By swinging your arm in a controlled arc without actually striking the ball, you will be able to check the position of the ball and your hitting surface in relation to the ball.

The hitting surface of the hand may be either a clenched fist or a semifist. The semifist is made by simply doubling the fingers at the first and second joints and keeping the third joint straight. In either position, it is very important to keep the thumb to the outside of the first finger rather than bringing it over to touch the second finger as you would in a normal tight fist.

The Action. As you take a short step toward the net with your forward foot, take the hitting hand and straight arm back in a line directly perpendicular to the plane of the net. As you complete the step, the hitting hand and arm come forward with sufficient force to propel the ball over the net. Try to return the striking hand to the same point on the ball which you assumed in the ready position. The arm and hand holding the ball should remain steady, and the ball should be dropped an instant before it is struck, not thrown wildly into the air and struck.

The Overhead Serve

Body Position. Face the net with the shoulders parallel to the net and feet staggered in a balanced position. The foot opposite the hitting hand is forward. The body is held in a nearly erect position as you prepare to put the ball in the air. Hold the ball, palm up in the nonhitting hand, in a position in front of the face so that the top of the ball is just below eye level.

As you hold the ball in this position, address the ball with the hitting hand directly behind the center of the ball.

Your hitting hand is very important in the successful execution of this serve. The hand should be cupped with the finger tips together and the thumb touching the first finger near the outside of the second knuckle. The wrist of the hitting hand is held stiff, creating a rigid surface from elbow to finger tips. Note as you lightly address the ball, contact is made with pads of the fingers, edges of thumb and little finger, and the heel of the hand.

The Action. From the ready position, you are confronted with the simple, yet important, task of correctly tossing the ball into the hitting area. Throw or lift the ball three to five feet in the air slightly in front of your body and directly in front of the shoulder of your hitting hand. As you toss the ball in the air, take a short step with your leading foot. Exact control of the ball in the air is important for consistency in executing the serve.

The hitting hand and arm are drawn back from the ready position as the ball is tossed so that the elbow is shoulder high and the upper arm is fully extended away from the shoulder. The hand and wrist should be in

a cocked position near your head. The forward arm action approximates the snap throw of a catcher to second base. Your elbow leads, swinging around in a throwing motion to a point directly in front of the shoulder. As the elbow moves forward, the wrist and hand "punch" forward to contact the ball in the hitting area. After contacting the ball, follow through by abruptly stopping the hand and arm with a snapping motion.

PRACTICE TASKS

Setting

1. Throw the volleyball upward at least five feet above your head and catch it in front of your forehead with the proper hand position and with your knees bent. Do it properly 10 times.
2. Stand about 15 feet from a partner. He/she should throw a high, easy ball (about 12 feet high) to you. Catch the ball in front of your forehead, using the correct hand position and with your knees bent. Do it correctly 9 out of 10 times.
3. Stand about 15 feet from a partner. Have him/her throw a high easy ball about three feet to your side (sometimes to your right side and sometimes to your left side). Move over directly in front of the ball and catch it in front of your forehead with the proper hand position and with your knees bent. Do it properly 8 out of 10 times.
4. Throw the ball about two feet above your head, then set it up using the correct hand and body position and extend your knees, arms, and fingers toward the ceiling. Then catch the ball. Do this 8 out of 10 times correctly.

Bumping

5. Get in the ready position (knees bent and arms straight). Go through the bump motion 10 times. Be sure you extend upward with your knees and that your arms stay straight.

6. Toss the ball about two feet above your head, bump it once as high as the tape mark on the back of the bleachers, then catch it. Be sure your arms are straight and the ball rebounds off your forearms. Extend up with your knees. Do this about 15 times.

7. Stand about 15 feet from a partner. He/she should throw a high, easy ball (about 12 feet high) about three feet to your side (sometimes to your left side and sometimes to your right side). Bump the ball back to him/her. The ball must go at least as high as the tape mark. Be sure you move directly in front of the ball; DON'T REACH OUT TO THE SIDE. Do this correctly 9 out of 10 times.

Underarm Serve

8. Stand halfway between the net and the end line. Serve 9 out of 10 balls over the net into the opposite side.

9. Stand behind the end line. Serve 8 out of 10 balls over the net into the opposite side.

Overarm Serve

10. Stand three feet from the net with your right hand toward the net. Toss the ball up (left hand under the ball and right hand on top of the ball) so that it goes as high as the top of the net and lands on a sheet of paper which is placed so its center is 8 to 12 inches in front of your right foot and in line with your right shoulder. Your left foot should be about 12 inches forward of your right foot. Do this correctly 8 out of 10 times.

11. Stand halfway between the net and the end line. Serve four out of five times into the court.

12. Move back three steps and serve into the court four out of five times.

Spike

13. Do a jump, using a two-foot take-off from a stationary position, by bending and extending your knees. Do five jumps.

14. Do a jump, using a two-foot take-off from a stationary position by bending and extending your knees. As you bend your knees, swing both arms downward and back. As you jump up, swing both arms upward and reach for the ceiling. Do 10 jumps.

15. Take a three-step approach and jump, using a two-foot take-off, swinging both arms upward. Do 10 jumps.

16. Hold the ball in your left hand. Hit it with the heel of your right hand (palm open) and make it bounce as high as possible off the floor. Catch it before it touches the floor again. Do this 10 times.

17. Toss the ball up above your arm reach and hit it downward as hard as possible with the heel of your hand. Use your entire body. Catch the ball before it touches the floor again. Do this 10 times.

18. Face the wall and stand about 15 feet from it. Toss the ball up and hit it with the heel of your hand so that it hits the floor about six feet from the wall. Catch the ball as it rebounds from the wall before it hits the floor again. Do this 15 times.

19. Lower the net until you can touch the top of it with your finger tips. Have a partner stand on a chair next to the net and at least one foot away from the net. Take a three-step approach and two-foot take-off and spike the ball hard and downward four out of five times into the opposite side.

PERFORMANCE TASKS

Setting Tasks

1. Toss the ball up into the air, then set the ball against the wall above the eight-foot line, using a legal set-up (no holding or throwing allowed). You must set the ball four consecutive times without touching the floor, being caught, or touching the wall below the eight-foot line. You may stand any distance from the wall. Have the instructor test you.

2. Throw the ball up about two feet above your head, then set it legally four consecutive times at least as high as the rope. Have the instructor test you.

3. Stand 10 feet from the rope. Toss the ball up about two feet above your head and set it legally over the rope. It must land in the circle on three consecutive attempts. Have the instructor test you.

4. Stand facing the rope, 10 feet from it. Have a partner, who is on the other side of the rope standing in the circle, throw the ball to you over the rope. Set the ball over the rope. It must land on the floor within the circle four out of five times. Have the instructor test you.

Bump Pass

5. Toss the ball about two feet above your head, then bump it higher than the rope 10 consecutive times. Have the instructor test you.

6. Stand about 15 feet from your partner. He/she should throw the ball downward and hard to you, aiming between your waist and knees. Bump the ball higher than the rope four out of five times. Have the instructor test you.

7. Stand 10 feet from the rope. Have a partner stand on the other side of the rope about 10 feet from it. He/she should throw the ball over the rope to you. Bump the ball back over the rope four out of five times. Have the instructor test you.

8. Stand about 15 feet from your partner. He/she should throw the ball downward and hard to you, aiming between your waist and knees. Bump the ball higher than the rope. Your partner must catch the ball before it touches the floor. Do this 8 out of 10 times. Have your instructor test you.

9. Stand 10 feet from the rope. Have a partner stand on the other side of the rope in the circle. He/she should throw the ball over the rope to you. Bump the ball over the rope so that it lands on the floor within the circle. Do this 8 out of 10 times. Have the instructor test you.

Underarm Serve

10. Stand behind the end line. Serve 8 out of 10 balls over the net but below the rope. Have the instructor test you.

Overarm Serve

11. Serve the ball 7 out of 10 times into the court from behind the end line. Have the instructor test you.

12. Serve 8 out of 10 times into the court from behind the end line. The ball must land four times on the right half and four times on the left half of the court. Have the instructor test you.

Spike

13. Face the wall and stand about 15 feet from it. Toss the ball up and hit it with the heel of your hand so that it hits the floor about six feet from the wall. As it rebounds from the wall, hit it again so that it hits the floor and then rebounds off the wall. Continue this for 30 seconds. Have the instructor test you.

14. With the net low, have your partner toss the ball up four feet above the net and about one foot away from the net. With a three-step approach and a two-foot take-off, spike the ball down and hard 7 out of 10 times into the opposite court. Have the instructor test you.

15. With the net at normal height, have your partner toss the ball up four feet above the net and about one foot away from the net. With a three-step approach and a two-foot take-off, spike the ball down hard 6 out of 10 times into the opposite court. Have the instructor test you.

Appendix D
Reciprocal Instruction Tasks and
Criteria Sheets

Name _____

Class _____

Date _____

Partner _____

Bump Pass Task and Criteria Sheet

Instructions for the Observer:

Communicate to the doer about how he or she is performing the task (use the "Things to Look For" column).

Make positive statements to doer first.

Examples of feedback statements:

"Your arms are in the correct position, but remember to have your knees bent, feet staggered, and body low."

"You have your arms and hands exactly as the criteria describe."

"Your elbows were locked, and your arms were straight, but remember to watch the ball until it contacts your arms."

Doer:

Task 1. Standing 10 feet from your partner, bump the ball back to the observer. Try to get the ball at least eight feet in the air. Repeat this 10 times, then switch roles.

Task 2. Return ball to person standing at the net by using the bump pass. Rotate positions in the back row on the court.

Observer:

Task 1. Toss the ball to the doer. Use a two-handed underhand pass which goes at least eight feet in the air. Observe the doer as he/she performs the bump pass. Make any necessary corrections and be sure to praise good skill performance.

Task 2. Stand up at the net while a third member of your group tosses the ball from the other side of the net to the doer. Watch the doer as he/she performs task. Make any necessary corrections and be sure to praise good skill performance. Switch roles after nine trials (three at each backcourt position).

Things to Look For	Task 1	Task 2
1. Stand in a staggered foot position, weight of body on balls of feet.	_____	_____
2. Clasp hands together, thumbs on top. Elbows as close as possible.	_____	_____
3. Watch the ball until it contacts your arms.	_____	_____
4. Contact of the ball takes place on forearms, slightly above the wrist joint.	_____	_____
5. At time of contact, elbows should be locked with the arms straight. This provides the ball with as flat a surface as possible.	_____	_____
6. Lift with the entire body; legs initiate the action.	_____	_____
7. The ball should be going at least eight feet up into the air and into the hands of observer.	_____	_____

Name _____
Class _____
Date _____
Partner _____

SET PASS CRITERIA SHEET

Instructions for the observer:

Communicate to the doer about how he or she is performing the task (use the "Things to Look For" column).

Examples of feedback statements:

"You were correctly under the ball with your knees bent, but remember to contact the ball in your face, not down by your chest."

"Your fingers were spread correctly, but remember to contact the ball with the inside of your fingertips, not the palms of your hands."

"You got under the ball correctly, you contacted the ball correctly, but remember to move in the direction you wish the ball to go."

Things to Look For	Tasks:	#1	#2	#3	#4
1. Person moves under the ball, knees bent.		_____	_____	_____	_____
2. Hands are placed above the head with elbows pointing down.		_____	_____	_____	_____
3. Fingers are spread, thumbs nearly pointing at each other, wrists are extended or bent backwards.		_____	_____	_____	_____
4. As the ball is contacted with the inside part of the fingertips, wrists and fingers are flexed forward while the arms are extended at the elbow.		_____	_____	_____	_____
5. Feet should be in stride position, with the body moving in the direction of the set.		_____	_____	_____	_____
6. As the ball is contacted with the fingers, the legs extend at the same time the arms extend.		_____	_____	_____	_____

Doer _____

Class _____

Date _____

Observer _____

UNDERHAND FLOATING SERVE CRITERIA SHEET

Instructions for the observer:

Communicate to the doer about how he or she is performing the task (use the "Things to Look For" column).

Things to Look For	Tasks:	#1	#2	#3	#4
1. Feet behind service line in a stride position.		_____	_____	_____	_____
2. Ball at waist level out in front of lead leg.		_____	_____	_____	_____
3. Hitting arm extended at the elbow and drawn backwards in preparation for the serve.		_____	_____	_____	_____
4. The hitting motion--at the same time the hitting arm is moving through its path, the body weight shifts forward from the trail leg.		_____	_____	_____	_____
5. The ball is contacted in front of the body at a point slightly below the waist.		_____	_____	_____	_____
6. Immediately prior to hand contact with the ball, the ball is released by the non-hitting hand.		_____	_____	_____	_____
7. Contact should be made squarely in the center of the ball.		_____	_____	_____	_____

UNDERHAND SERVE TASK SHEET

Task #1. Wall Serving Drill

Doer stands about 30 feet from the back of the bleachers and practices serving the ball above the metal mark. Doer takes 10 trials, then switches roles.

Task #2. Serving With Partner (no net)

Partners stand paired off facing each other across the volleyball court (sideline to sideline) and practice serving the ball. At the highest point, the flight of the ball should be about 13 feet above the floor. Doer takes 10 trials then switches roles.

Task #3. Serving With Partner (with net)

Partners face each other across the volleyball net while behind the baseline. The doer takes 10 trials while the observer makes necessary corrections. Doer serves deep and clears the net about five feet across the net. (Observer then rolls the ball back to partner.)

Task #4. Serving Target Drill

Partners pair off facing each other behind their respective baselines and directly opposite each other. The court is divided into three 10-foot strips extending from baseline to baseline. Each strip is divided into three scoring zones. Points scored will be recorded on criteria sheet. Doer will take 10 serves then switch roles.

Doer _____

Class _____

Date _____

Observer _____

OVERHAND FLOATING SERVE CRITERIA SHEET

Instructions for the observer

Communicate to the doer about how he or she is performing the task (use the "Things to Look For" column).

Things to Look For	Tasks:	#1	#2	#3	#4
1. The ball is tossed without spin about three feet above the head.		_____	_____	_____	_____
2. As the server steps forward with the lead leg (leg opposite hitting arm), the striking arm is cocked back in a hitting position.		_____	_____	_____	_____
3. The ball is contacted at full extension of the arm directly over the head and slightly in front of the body.		_____	_____	_____	_____
4. The ball is contacted in the center of its axis by the heel of the striking hand (hand is open).		_____	_____	_____	_____
5. The ball is hit firmly, but with little follow-through.		_____	_____	_____	_____

OVERHAND SERVE TASK SHEET

Task #1. Wall Serving Drill

Doer stands about 30 feet from the back of the bleachers and practices serving the ball above the metal mark. Doer takes 10 trials, then switches roles.

Task #2. Serving With Partner (no net)

Partners stand paired off facing each other across the volleyball court (sideline to sideline) and practice serving the ball. At the highest point, the flight of the ball should be about 13 feet above the floor. Doer takes 10 trials then switches roles.

Task #3. Serving With Partner (with net)

Partners face each other across the volleyball net while behind the baseline. The doer takes 10 trials while the observer makes necessary corrections. Doer serves deep and clears the net about five feet across the net. (Observer then rolls the ball back to partner.)

Task #4. Serving Target Drill

Partners pair off facing each other behind their respective baselines and directly opposite each other. The court is divided into three 10-foot strips extending from baseline to baseline. Each strip is divided into three scoring zones. Points scored will be recorded on criteria sheet. Doer will take 10 serves then switch roles.

Doer _____

Class _____

Date _____

Observer _____

POWER SPIKE CRITERIA SHEET

Instructions for the observer:

Communicate to the doer about how he or she is performing the task (use the "Things to Look For" column).

•

Things to Look For	Tasks:	#1	#2	#3	#4
1. Maximum of three or four approach steps.		_____	_____	_____	_____
2. At the completion of the final two steps, the feet come together and the actual vertical jump is made from <u>two feet</u> .		_____	_____	_____	_____
3. The doer jumps into the air using a double-arm swing.		_____	_____	_____	_____
4. Once in the air, the doer arches the back, rotates the shoulder girdle, and cocks the hitting arm in preparation for the spike.		_____	_____	_____	_____
5. When spiking the ball, the doer contracts abdominal muscles; the shoulder girdle rotates counter-clockwise (right hander), clockwise (left hander), and the ball is hit with					

a striking action of the
open hand.

6. When the ball is hit, the
elbow is fully extended,
and the wrist joint is
flexed.

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