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FOR TEACHING AND COACHING BADMINTON.

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A COMPETENCY-BASED INSTRUCTIONAL SYSTEM
FOR TEACHING AND COACHING
BADMINTON

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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* * * * *

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CHAPTER I

INTRODUCTION

The nature of teaching and learning has been a prime concern in the educational world for many centuries. Recently, with an increased shift of emphasis toward individualization, self-paced and self-directed learning, a prominent question has been raised as to the necessity of maintaining schools and teachers in a formalized setting. In answer to this, Singer stated:

This is not a frivolous question; many critics of current educational practices ask it or similar ones. The answer is twofold. First, teaching should ensure that people acquire behaviors they might not if left to the whims of informal educational environments. Second, teaching should make the acquisition of behaviors quicker and more enjoyable than an informal environment (Singer, 1976, p. 103).

The manner in which teachers teach and the causes of student learning are not concerns for researchers in education. A teacher's personal traits, such as personality and enthusiasm, and their teaching behaviors, such as verbal and nonverbal behaviors, have been the focus of numerous studies conducted to determine teaching effectiveness.

Perhaps one of the most common research approaches to student skill acquisition is for the teacher to conduct several classes composed of students with similar entrance

behaviors. Each class, which is composed of the same subject matter, is taught with a different method or style of teaching, followed by a comparison of the results. The researcher hypothesizes that for this particular group of subjects, one specific method should be the most conducive for the development of skill(s). However, all too frequently, no significant difference between the methods is found.

The subject matter of the above mentioned studies varies. The effectiveness of teaching swimming by the use of two different methods was the subject of a study conducted by Holt, et al. (1970). Mariani (1970) and Farrell (1970) compared the effectiveness of utilizing different methods of teaching selected forehand and backhand strokes, while Cotten and Nixon's study (1968) compared the effectiveness of two methods of teaching the tennis serve. Grebner (1969) tested the effectiveness of two methods of attaining a full draw by beginning archers.

These and the majority of skill acquisition studies still do not answer questions regarding how much actual individual learning occurs. Furthermore, to simply determine one method to be best does not explain why some students learn and perform better after being taught by the control method. The puzzling dilemma that still perplexes educators is how to design a curriculum that will best enable all students to reach their potential. Locke and Jensen (1971),

after reviewing selected research on skills instruction, stated that even though most of the research reported centered around programmed instruction in the development of the cognitive domain, there is rationale to support that motor skills can be programmed. Programming instruction is a possible and perhaps viable means of breaking down the subject matter into small successive intervals, so that each individual is assured of some mastery of fundamental motor skills.

The acquisition and development of skill has not been adequately investigated. Factors that contribute to the performance rate of an individual student or group of students have not been explored in sufficient detail. Teaching units, based on teacher or administrative pre-determined length of time, may or may not be appropriate for the necessary learning to occur. Teaching units assist a teacher in organizing teaching content and progressions, but they generally do not provide the conditions necessary for individual rates of learning. This unit approach to curriculum organization is too restrictive for optimal learning and performing. The highly skilled performers are not challenged and the lower skilled become frustrated. This type of teaching and curriculum organization tends to focus more on the subject matter to be conveyed rather than on the learner.

The single-mindedness of the physical education curriculums, according to Mosston tend to be geared for a

pre-determined number of activities to be offered during a school year. He further stated that:

There is no relationship at all between this structure and the performance status of so many varying students. Either all students are requested to learn all the presented activities--an impossible feat because of the heterogeneity of classes in physical education--or there is no demand for learning, accomplishment, and developing in any meaningful way, since the activity changes, not when the student has reached a desirable level, but when the number of prescribed weeks are over, usually in the middle of the progress of most student (Mosston, 1966, p. 137).

The educational world has operated under the basic assumption that the students learn because of something the teacher does. According to Pease and Tabor:

Too often this belief has resulted in teachers making decisions based on what teachers are supposed to do (role expectations) rather than considering how learners learn and making decisions accordingly. It appears logical that the first step in the process of producing a competent physical educator is to determine from research how learners learn sport skills. Once the knowledge is obtained, some inferences can be drawn about how teachers of physical education should teach learners to learn sport skill (Pease and Tabor, 1975, p. 42).

When discussing individual skill acquisition there are certain key questions that need to be researched and answered. Four of these are (1) What is the optimal number of trials necessary per skill for assessing a standard criterion? (2) How many skills can a student master per day? (3) Does a breakdown in execution of skills occur from an isolated performance to the performance in an actual game situation? and (4) If all skills are necessary for proficiency

in game play. then how can not assessing the learner while executing all skills be justified?

For years professional educators have expressed the belief that not all students learn at the same rate and under the same conditions. Even though this claim has been expressed, little has been done in the schools to provide for individual differences in learning. By the same token, little has been done in the educational framework to provide, or even encourage, teachers to utilize materials necessary for different means of conveying information. In fact, a teacher sometimes is stifled or criticized for utilizing new innovative teaching methods, materials, and techniques. School personnel not only assume that all students learn best sitting at a desk or on the floor in squads, but also that all teachers teach best standing in front of a large class talking, explaining, demonstrating, or issuing commands.

Physical educators have incorporated, in their teaching sequences, explanation, demonstration, drill, practice, lead-up activities, and game participation. This traditional teaching model has been prominent in physical education for many years. The popularity of this model has been widespread and overused. Experimentation with innovative teaching styles has not been emphasized in physical education teaching and sometimes student teachers have been criticized for not teaching in the traditional role (Hoffman, 1971).

Teachers and supervisors of physical educators must acquire knowledge and maintain a flexible attitude toward alternative teaching models. Hoffman (1971) stated that "traditional methodology in physical education has its basis not in science or even theory, but in the unglamorous realities of life. To acknowledge this is to take the first step toward change" (p. 57).

The variety of techniques available for teachers to provide learners with a variety of learning alternatives are numerous. Having visual aids such as textbooks, pictures, and illustrations available at all times provides the learner with an excellent source of information. Loop films, video tapes, cassette tapes, diagrams and charts are other modes of communication that are available for utilization by both teacher and learner. The explanation-demonstration technique, used solely, provides a limited source of information to the student. It is an intangible learning source, in that once it has been executed or spoken, it is gone and cannot be identically reproduced, repeated, or performed. The tangible multi-media learning sources provide the learners access to repeated consistency. They may view or listen to the learning assistants numerous times and they will always be identically reproduced.

The use of verbal and non-verbal reinforcement is a technique that should be used by all teachers. Some authors have stated that students tend to function better in a

positive rather than a negative environment. Besides the teacher as the reinforcer, charts and rating scales can be used. Students can mark and record their own skill attempts and accomplishments, or they can be evaluated and assessed by a peer.

In order for the reinforcement to be of optimum effect, it must immediately follow the desired act or behavior. It is not practical or feasible for a teacher to reinforce all appropriate behaviors by all class members when all students are engaged in activity at the same time, so an alternative design has to be utilized. If motivation is contingent upon success, and if reinforcement contributes to motivation, then we must devise some means of measuring success. Once we have established that information, it has to be processed and fed back to the individual immediately.

Mosston (1966) stated that the most common means of conveying or imparting knowledge utilized by physical education teachers is the command method. Some of the basic premises underlying this method are (1) all students learn at the same rate; (2) the teaching material is geared or directed toward the average student; (3) all students are forced to learn or relearn the material which is selected or determined by the teacher; and (4) the teacher determines the time that is to be spend on learning or accomplishing the task(s). Hoffman (1971), utilizing the criteria which is descriptive of command teaching, as proposed by Mosston, developed in

more detail the fundamental characteristics, which cannot be entirely altered or camouflaged, of the traditional method of teaching. The characteristics that Hoffman identified centered around: (1) direct delivery of the message by the teacher; (2) organizational efficiency is a prime concern of the teacher; (3) neatness and order in dress and organizational formations are extremely rigid; (4) discipline and class control are carefully planned for, thereby decreasing the possibility of unplanned and unpredictable student behaviors; and (5) skill analysis of individual student performance is considered important, but not as much as the ability to design, administer, and conduct organized group practice experiences.

Refuting this particular style of teaching, educators who support the claim of individual differences have been instrumental in developing varied student learning alternatives. Computerized instruction, the use of technological devices, programmed instruction, learning activity packages, teaching-learning units, and competency-based instruction are a few examples.

Competency-based instruction (CBI) and the development of an instructional system are of concern to this researcher. The development of a competency-based instructional system to assist physical education students in acquiring skills in all three domains (affective, cognitive, psychomotor) and to provide a means of assessing skill as

it is being acquired are the major purposes of this research study.

Physical educators, often times, in their pre-service educational classes are not exposed to different instructional systems. They are also not made aware of the external factors that play a major role in the eventual selection of their teaching style. Singer (1976) stated that, ". . . the adoption of a teaching system by a teacher is governed by the feedback reinforcement contingencies in the school or nonschool setting" (p. 161).

Many factors, such as the teacher's educational background, school administration, or the system that is the easiest to design and administer, affect the teacher's selection of an instructional system. Within these influencing factors, some may be educational and some may be noneducational in nature, but all are very powerful in the decision-making process.

Competency-based is centered on the specification of what constitutes mastery in any given subject matter field. The manner in which the competency level is communicated occurs through the application of specific objectives written in behavioral terms. Once the required behaviors have been established, they are sequentially arranged in a hierarchy from simple to complex. Following this, an instructional sequence to assist the learner to accomplish the tasks is planned. A test or check of some sort to determine if the

required competency level has been achieved is administered once the learner determines readiness for a final evaluation.

Alternative ways of learning are provided for in a competency-based program since psychological reports have stated that different individuals possess different learning styles. The emphasis in a competency-based program is on achievement of specified objectives rather than on ranking the learners. Therefore efforts are made to increase the probability of learner success by providing a variety of learning routes, from which the learner may select the ones most compatible with his/her own learning style.

A competency-based instructional system can be both personalized and individualized. It not only can provide the learner with a variety of learning alternatives, but also with the provision for the learning to be self-paced. Student assessment is continual and ongoing rather than solely at the end of a certain specified time period. The results are visible and immediate. Because of this immediacy of feedback, the student should become more motivated.

Meaningful, as well as immediate, evaluation is an important aspect of the total education process. The inherent purpose of grading, to assess and report differences in knowledge, performance, etc., has long vanished. Grades tend to no longer be discriminatory, nor are they for the most part an accurate assessment of learner accomplishment. They are ambiguous and lack consistency throughout the total

educational system. In order for a grade to be meaningful to the student and other interested persons, a statement of accomplishments should accompany the report. In a functioning competency-based curriculum, these statements are a part of the evaluation, and in some instances no grades are given, but rather progress is reported in terms of competencies mastered.

The purpose of this research was to develop a competency-based instructional system for teaching and coaching badminton and to determine if the establishment of this tool would prove to be a functional and meaningful measure for assessing individual mastery.

STATEMENT OF THE RESEARCH PROBLEMS

1. Can badminton skills be defined behaviorally and arranged in sequential order?
2. Is a competency-based instructional system a feasible means for acquiring and mastering competencies in badminton?
3. What is the average number of trials needed for cognitive and psychomotor competency mastery in badminton?
4. Can a competition skill evaluation instrument be developed and used reliably?
5. Is there a correlation between isolated skill acquisition and game playing evaluation?

ANALYSIS

It was the purpose of this study to develop a competency-based instructional system that allowed and provided for individual differences in learning. To accomplish this purpose, this study employed a module design (Houston et al., 1972 and Nagel and Richman, 1972) with differing performance levels.

Additional concerns of the researcher were to (1) examine the effects of self-determined skill level and performance rate on the psychomotor and cognitive learning rate of the performer, and (2) to evaluate and assess game play with an appropriate rating scale.

LIMITATIONS OF THE STUDY

The study was limited by the following factors:

1. The subjects were limited to the physical education majors beginning badminton class.
2. The length of the total number of weeks the class met, as pre-determined by the University calendar.
3. The number of times the class met per week, as pre-determined by the University guidelines established for the number of class meetings per credit hour.

DEFINITIONS

For the purposes of this study, the following terms were defined:

Behavioral Objective: A statement that describes the outcome or performance the learner must demonstrate as a result of participation in a given activity.

Modules: The arrangement of the subject matter into a meaningful and purposeful arrangement. All modules contain eight components: (1) Rationale; (2) Estimated Time; (3) Prerequisites; (4) Pre-Assessment; (5) Level Objectives; (6) Instructional Activities; (7) Post-Assessment; and (8) Remediation.

Competency-Based Instruction (CBI): "A program in which students progress through a sequence of modules which contribute systematically to the overall preparation of of the learner. . . . The modules contain behavioral objectives which are public, are individualized and personalized, and are criterion-referenced" (Cruickshank, 1973, p. 2).

Instructional System: The schematic flowchart descriptive of the total organization of the curriculum design. A collection of interrelated and interacting components that work in an integrated fashion to attain predetermined purposes (Banathy, 1968).

Level Performance: Differentiations of performance competencies within each module.

Rationale: Explanation to the learner of the importance, execution and purposes for mastering the selected competencies.

Estimated Time: An approximation of the amount of time necessary for the completion of each module.

Prerequisites: Stated competencies the learner must have mastered prior to beginning or entering each module.

Pre-Assessment: A subjective evaluation, by the instructor, when requested by the learner, of the performer's competency level prior to entering the module.

Instructional Activities: Suggested sources and resources selected to assist the learner in fulfilling the stated level competencies.

Post-Assessment: A subjective evaluation of the performer's mastery of the stated objectives following the completion of the module objectives. This assessment is requested by the learner when he/she feels the objectives have been mastered. This assessment measures competency relative to the objectives (Houston, et al., 1972).

Remediation: Suggested sources of correction available for the students unable to demonstrate competency mastery.

Flow Chart: A schematic diagram which serves as the means by which the students complete each module. Students unable to complete any objective may exit from the module and reroute themselves through the suggested learning activities.

Learning Alternatives: Learning assistants designed to help the learner correct any errors in performance.

Trial: Designated number of attempts stated as the criterion reference in the objective.

Feedback: Procedures imbedded in each module so that students can measure and assess their own performance and the performance of a peer.

Rating Scale: Tool used to record the students performance during game play.

Skill Recording: A means of self-recording attempts of objectives within each module.

Skill Sequence: Combining the mechanical execution of the shot with movement on the court into a total pattern. There are three parts possible in all skill sequences-- (1) moving to the court position to hit the shuttle; (2) the mechanical stroke execution, and (3) movement back to the ready court position or appropriate court position. The only exceptions to this sequencing is when the shot originates from a stationary court position.

Criterion-Referenced Evaluation: The learner's progress and accomplishments are compared with the stated objectives and criteria.

Norm-Referenced Evaluation: The learner's progress and accomplishments are compared with the accomplishments of other students.

Closed Feedback Loop: The schematic diagram representing the recycling procedure for those learners unable to complete the stated competencies.

Individualized: The learner is able to complete tasks at his/her own pace and at his/her selected times.

Personalized: The learner has choiced among objectives and learning activities.

Competency Mastery; The learner successfully completes an instructor-conducted evaluation of the stated level objectives.

BASIC ASSUMPTIONS

The following are assumed to be true:

1. Skill and knowledge proficiency increases as a result of completing the module level objectives.
2. The correlation of competency mastery and game playing ability is a result of the student completing all necessary level objectives.
3. After completion of the modules, any change in student performance is a result of fulfilling the level objectives, and thus reducing the probability that change was caused by chance.

CHAPTER II
REVIEW OF RELATED LITERATURE

The major areas in the professional literature most relevant to the development of a competency-based instructional system for teaching and coaching badminton are these:

- (1) Research related to instruction in badminton,
- (2) Research related to competency-based teacher education,
- (3) Research related to competency-based instructional systems.

Badminton Instruction

The majority of writings concerning instruction in badminton were in the form of textbooks (Bloss and Brown, 1975; The Athletic Institute, 1969; Poole, 1969, Burris and Olson, 1974; Pelton, 1971; Rogers, 1970; Johnson, 1974, and Davidson and Gustavson, 1964), or chapters within sports techniques textbooks (Seidel, et al., 1975; Broer, et al., 1971; Hale, 1974; and DeWitt and Dugan, 1972). The organization and presentation of the subject matter in these sources ranged from a traditional approach to a conceptual approach (Seidel, et al., 1975 and Burris and Olson, 1974). Content organization and progression in the various sources

appeared to be dependent upon the author's personal philosophy. Suggested daily lesson plan organization and/or presentation of content could be found in several of the sources (Broer, et al., 1971 and Hale, 1974). Strategy, terminology, rules of play, etiquette, and mechanical principles were found in all of the sources.

The National Association for Girls and Women in Sport published an official rule guide for badminton (1976-1978; 1972-1974; 1970-1972; 1968-1970; and 1966-1968). Included in the guide were rules of play, officiating techniques, and articles on topics pertinent to badminton play. The subject matter content of the articles varied from mechanical principles of execution to singles and doubles game play shot choice and court coverage strategy to conditioning programs to skill tests.

The remainder of the badminton instructional literature surveyed centered around articles or studies conducted on development of mechanical teaching aides, various teaching methodologies and techniques, effects of others on performance, and self-concept testing. The subjects for these studies ranged in age from high school to college, with both males and females comprising the research population.

Johnson (1973) developed a set-up machine for stroke practice of the overhead smash-type shots. The machine was also designed to be adaptable for tennis and volleyball shot practices. According to the author, the values of this

machine were that it could be used for off-court shot practice, for both testing and training purposes for three different shots, plus because of its light weight, it was easy to transport from one place to another and it was relatively inexpensive to build.

Parker (1973) established a badminton smash test utilizing Johnson's Set-Up Machine. Each student was allowed seven practice trials followed by ten trials for score. The machine was placed thirteen feet from the net, and the student was to smash the shuttle into the marked off singles court area. The data revealed that with a maximum of ten possible points, beginning students averaged three to four points, with seven to eight points being considered excellent.

Baker (1971) developed, constructed and tested an instrument which would accurately project shuttles to a specified area on the court. Reliability of the instrument was determined through test-retest and was determined to be high, indicating extreme accuracy and stability.

Smash and overhead drop skill tests were constructed and tested by Besner (1974). Fifty-five women subjects divided into three groups were tested during the twelfth week of a fourteen week instructional unit in beginning badminton. A low correlation was revealed when the data obtained from the test were correlated with judges subjective ratings, indicating the validity for both tests was questionable. The

coefficient of reliability was also found to be weak leaving question as to whether the tests consistently measured the skill.

The effects of various practice periods on learning and retention of skills were studied by Bonalewicz (1973), Fox and Young (1962) and Bell (1968). Bonalewicz (1973) studied the effects of various lengths of practice periods on the learning of new motor skills. Fifty senior high school freshmen males who had little or no previous experience in badminton were the subjects. The hypothesis that there was no difference in the effectiveness of various lengths of practice periods when learning new motor skills was tested. Three practice periods of 5/8's, decreasing, and constant were utilized. It was discovered that the 5/8's, decreasing and the constant practice periods were equally effective in teaching the high and low badminton serves to high school males. It was also found that an increasing practice period was not as effective as the decreasing, constant, and 5/8's practice periods when teaching the serves.

Fox and Young (1962) studied the effects of the degree of original learning and the length of two nonpractice periods of reminiscence in badminton. Sixty-eight college women students, enrolled in badminton service classes, were divided into two groups. One group received six weeks of instruction and the other group nine weeks of instruction. Pre- and post-tests of the wall volley and short serve were

given at the beginning and end of the instructional periods and at the end of each nonpractice period. The results of the data analysis revealed that reminiscence did occur in the wall volley skill, but did not occur in the short serve. The authors concluded that an additional three weeks of instruction did not contribute significantly to the retention of the wall volley.

Bell (1968) studied the effectiveness of augmented knowledge of results and its effect upon acquisition and retention of a gross motor skill. Seventy-eight college students practiced the badminton long serve 20 times daily for 8 days under 4 different knowledge conditions. The results of the data analysis indicated that although the performance of males was significantly better than that of females, the direction of practice through the use of additional knowledge of results does not further affect the acquisition or retention of gross motor skill at beginning levels of performance where sufficient knowledge of results is inherent in the task.

Thorpe, West and Davies (1971) conducted a study to determine differences in learning under a traditional and an experimental schedule involving master classes. The results of the pre- and post-skill tests (the wall volley, low serve, high clear, and sliding shuttle), and knowledge test revealed that the traditional method of scheduling was superior to the master class method for skill learning. The investigators further concluded that within the master classes, the more

experienced master teachers obtained better results than the less experienced. Significant cognitive learning occurred for both groups.

Burdeshaw, et al. (1970) tested the effectiveness of a basic skills course as a prerequisite for performing badminton skills among college women of low motor ability. The results of the analysis of data collected at mid-semester and at the end of the semester revealed that there was no significant difference found between subjects who experienced a basic skills course prior to badminton instruction, one enrolled initially in badminton, and a group that experienced another sport prior to badminton. The results supported specificity in learning motor skills, and did not support the worth of a basic skills course in facilitating subsequent performance in the specific skills of badminton.

The establishment of skill and knowledge proficiencies was the purpose of the investigation conducted by Farrow (1972). Data revealed that the badminton test batteries of the clear test and either the bounce or footwork test were found to be reliable and valid skill measures for proficiency examinations.

Intelligence and skill in relation to success in singles competition in badminton and tennis was researched by Thorpe (1967). The results revealed a significant F ratio between skill level and success in competition for both

sports, and a nonsignificant F ratio for intelligence and success.

The presence of a significant other during an isolated performance of the overhead clear was studied by Miskovic (1976). Sixty-three college females, including fifteen intercollegiate badminton players, were placed into an experimental or control group. Each subject completed the modified Poole Overhead Clear Test. All subjects in the experimental group brought with them, when they came to the test, a significant other. The results of the analysis indicated that, for high and low skilled female subjects, performances of a badminton clear did not increase while in the presence of a significant other.

Visual aids utilized as supplemental learning devices were examined by Gray and Brumbach (1967), Stephens (1973), and Bradley (1976). Gray and Brumbach (1967) studied the value of using loop films as supplemental learning aids. Results of midterm testing revealed that the group that viewed the loop films made a significant improvement in playing ability over the group that had not viewed the films. The final tests results administered at the end of the class indicated that both groups had improved significantly in playing ability, but there was no significant difference between the groups. The researchers concluded that viewing the loop films appeared to hasten learning.

Stephens (1973) conducted a study to determine the effects of being instructed by traditional methodology only or traditional methodology augmented by videotape replay on skill performance. Pre- and post-test measurements on a closed skill of the Scott and French Long Serve Test and an open skill using the French Clear Test, revealed that videotape feedback did not aid in acquisition of skill at the beginning level, but was of value if the skill level was high. Feedback was also discovered to be more beneficial in the closed than the open skill.

Bradley (1976) compared results from selected skill performances of three treatment groups, all instructed by the traditional methodology, but two groups received supplemental visual feedback in the form of videotape replay or loop film observation. Pre- and post-tests ANOVA revealed significant differences in skill using all three methods of instruction. No significant post-test differences were noted among the three groups.

The effect of the timing of verbal comments in relation to the replay of videotape on the ability of highly-skilled intercollegiate badminton players was researched by Barker (1977). Two skills were selected for analysis, the serve and the return of serve. The results of the analysis revealed that there was no significant difference in serve and return of serve effectiveness due to any of the videotape interventions. There was, however,

a significant difference of the skills between ability levels as the highest ability players were the most effective in executing serving and returning serves.

The effect of videotape replay on the movement self-concept of college women badminton players was studied by Anderson (1972). Two classes were instructed for a five-week period, after which one class was exposed to videotape replay as a supplemental aid. The results indicated that the videotape replay had the effect of increasing correlation between the real and ideal movement self-concept. The results also revealed that the correlation between the real and ideal movement self-concepts of the successful group (those who won at least 88 percent of points played) was consistently higher than those for the unsuccessful group (those who won 70 percent of the points played).

Differences in skill and knowledge development and performance resulting from instruction in different teaching methodologies for different age groups was the purpose of studies conducted by Reidinger (1973), Melville (1972), and Malizola (1974). Reidinger (1973) studied the differences between the amount of improvement obtained from a class taught by individualized instruction, traditional instruction, and no-instruction for subjects ages nine through thirteen. The results revealed that a significant difference was found between the traditionally taught

group and the no-instruction group, but that no significant difference was found between the traditionally taught group and the individual instruction group. Further analysis revealed that there was no significant difference between the individual instruction group and the no-instruction group.

Melville (1972) reported different findings in a study utilizing college students as the subjects. The analysis of pre- and post-test scores indicated that the group taught by the individually prescribed instructional system (IPI) gained significantly in performances of the clear, serve, and drop shots.

Malizola (1974) conducted a study to develop and validate a programmed instructional tool to teach badminton skills and also to compare the effectiveness of the traditional method of teaching with the programmed. Post results of two measures, the Miller Wall Volley Test and the subject's final ranking in the tournament were subjected to analysis. The results indicated that the programmed method of teaching was as effective as the traditional.

Behavioral objectives to specify desired outcomes have been developed by Kraft (n.D.) and Sientop and Rife (1975). Kraft (n.D.) proposed a course outline, which stated in behavioral terminology, the objectives to be performed in completing a badminton unit. Sientop and Rife (1975) developed and field-tested a set of instructional objectives for advanced badminton.

A comparison of skill level to hypothetical teaching recommendations was studied by Field (1975). Ninety-six college males, enrolled in badminton classes played in a class round-robin tournament and were ranked according to final standing. Each was asked to list in order the first three men in class whom he would recommend for a hypothetical badminton teaching position and in order the last three he would recommend. Results of the correlation indicated that a very high (.924) correlation existed between whom they would recommend and their final rank in the round-robin tournament.

The literature reviewed in this section centered around research conducted and writings about various aspects of badminton instruction. Based upon the results of the studies reported, it appears that augmented feedback, in the form of videotape replay may assist performers in skill acquisition, and the development of a movement self-concept. It has not been clearly demonstrated, however, that one teaching methodology is more effective for students to learn and perform badminton skills and knowledges.

Competency-Based Teacher Education

Competency-based educational systems have been the topics of numerous writings during the last ten years. Entire issues of professional journals have been devoted to the exploration and debate of the advantages, disadvantages,

and ramifications of competency-based teacher education. The November, 1972, issue of Educational Technology, the Journal of Teacher Education, Fall 1972 issue, and Phi Delta Kappan, January, 1974, are examples of such mentioned publications. Kay and Rosner (1973) stated that competency-based teacher education has attained status of a national movement.

The main thrust of the competency-based movement, as it applies to teacher education, appears to have been generated by the U.S.O.E. (United States Office of Education), Elementary Models Project. Since this thrust, pilot projects have sprung up in a number of institutions, and by 1972 some seventeen states had announced their intent or declared their intentions to make certification changes based on competencies (Houston and Howsam, 1972). In an issue of Today's Education (1974), the results of a joint survey of the AACTE (American Association of Colleges for Teacher Education) and ETS (Educational Testing Service) were published, which stated that more than 70 percent of the 719 colleges and universities responding reported plans to initiate CBTE programs for their teacher training.

Competency-based education has aroused more than simply a passing educational fad (Elam, 1971; Houston and Howsam, 1972; McDonald, 1974). A number of state education offices, including New York, Utah, Texas, and Florida have mandated competency-based certification for teacher education

graduates. According to Kay and Rosner, many factors seem to account for the widespread appeal of competency-based teacher education. Some of the factors, according to these authors are:

Many teacher education faculties are captured by the promise that CBTE offers for expanding the knowledge about teaching base and for establishing teacher education on firm theoretical and empirical grounds. It is unlikely that the movement would have gained such momentum though if CBTE were characterized as solely an empirical or research orientated teacher education program.

The accelerated growth of the movement must also be attributed to a wide variety of factors which have come to be associated with the development and implementation stages of the concept. The emphasis on individualization and personalization coupled with a heavy field centered emphasis which involves school systems, classroom teachers, school administrators and the community lead to the notion that there is something in it for everyone (Kay and Rosner, 1973, p. 47).

Competency-based programs are characterized by explicit learning objectives stated in behavioral terms. These objectives are student-orientated. The emphasis is on the exit rather than the entrance level of the performer. The competencies are criterion-referenced rather than norm-referenced, which provides for a more effective and meaningful evaluation for the performer. The use of behavioral objectives in physical education is invaluable in that the results of the learning process can be measured through observable student behaviors. These behaviors can be through movement, or through an observable project, or through verbalization (Davis, 1973).

Some educational leaders believe that competency-based teacher education has the potential for improving the quality of teacher training more thoroughly and effectively than most of the current innovations. Entry behaviors in competency-based programs should be emphasized and challenged, according to Sickmiller. In reference to this, he stated that:

One of the essential elements of the CBTE movement is the specification of behavioral stated teaching competencies. In this concept the CBTE Model places its deepest roots, and without such an element, the Model would cease to stand. Our knowledge is somewhat limited at this time, however. We especially lack that essential assurance of a direct relationship between certain teaching performances and the corresponding pupil learning. But it is agreed by CBTE proponents that we have enough knowledge to move ahead and specify competencies, while looking for the research evidence of a one-to-one correspondence between teaching performance and pupil learning (Sickmiller, 1975, p. 33).

Elam's summary (1971) of the major characteristics of a CBTE model categorizes the essential elements inherent in the program:

- (1) essential elements of CBTE
 - (a) emphasis on demonstrated teaching competencies
 - (b) behavioral competencies stated in measureable, observable terms
 - (c) competencies which are publicly verifiable from the outset
 - (d) criterion-referencing rather than norm-referencing of competencies
 - (e) emphasis on student performance rather than knowledge
 - (f) student progress at individual rates

(2) implied elements of CBTE

- (a) individualized and personalized instruction
- (b) emphasis on feedback to the student about his work
- (c) systems design for program
- (d) exit requirement emphasis instead of entrance criteria
- (e) student accountability for progress and performance

(3) desirable elements of CBTE

- (a) field-centered program
- (b) parity of decision-making among public schools, teacher training institutions, state departments of education, parents, other interested parties
- (c) teacher trainees' participation in setting goals, designing programs, guiding instruction
- (d) research component of the program for ongoing improvement

Although competency-based teacher education has not yet been firmly grounded in research (Houston and Howsam, 1972; Siedentop, 1973; Burden and Mathieson, 1972) a number of beginning efforts have been explored. Teacher education programs must, and have already begun, to assess the level of mastery of critical concepts and skills that are to be required of the students. Maxim (1974) suggested that teacher-education college programs are not assisting students in applying research data to school programs, but the problem can be minimized if CBTE programs would include activities designed to develop skills for interpreting and applying research findings.

Problems of CBTE, such as changing faculty roles, economic costs, implementation, and certification have been discussed (Houston and Howsam, 1972; Edwards, 1973).

Criticisms have been made concerning the logic and value of changing from what is now the competency-based design. In reference to this, Edwards wrote:

One of the most fundamental criticisms which may be made of performance-based programs is that they don't meet the expectations of logical criteria. A set of criteria for judging them has been developed by the AACTE Committee on Performance-Based Teacher Education. Programs must be based on competencies which are derived from explicit conceptions of teacher roles. Then competencies must be made public to students and in terms which make a valid evaluation possible (Edwards, 1973, p. 188).

A total program design, established utilizing the competency-based format has been proposed and discussed in several curricular areas. Adult education performances-based programs was discussed by Miller and Greer (1973). The implications of competency-based education for urban children was debated by Lessinger (1972). Secondary curriculum design was explored by Aubertine (1972), and Rice (1972) discussed competency-based education and the open classroom. The human side of competency-based education was proposed by Alschuler and Tvery (1972), while Young and Mondfrans (1972) wrote on psychological implications of competency-based education.

In order to show differences in design, content, and emphasis, Johnson (1974) compared competency-based and traditional education practices. His comparison was directed more toward implementation and practice than theory.

Several states have adopted demonstration of competencies prior to graduation from high school. In a report by the National Association of Secondary School Principals (1976), the following states reported instituting competency requirements for graduation from high school: Arizona, California, New York, Oregon, Virginia, Florida, and Louisiana. Maryland was reported to be working on exit proficiencies.

Competency-based teacher training programs have been discussed by Bechtol (1972) and Scott (1975). Descriptive assessments of competency-based teacher education have been conducted by Givens (1973), Sipkens and Turkovick (1973), and Clegg and Ochoa (1970). Jarrett (1974) conducted a conceptual analysis study of competency-based education in the liberal arts, and Hensley (1975) developed a conceptual model for competency-based certification of secondary school counselors. Spriggs (1974) developed a handbook to be used as a guide by teacher educators interested in developing instructional modules to enable mastery of teaching competencies, and Huddleston (1972) described, through analysis of responses from a survey, a competency curriculum model for secondary school agricultural programs.

Studies have been conducted on the effects of a competency-based format on teacher and pupil behaviors (Cohan, 1973; Hurst, 1973; Levine, 1972; Edwards, 1975; Bullock, Dykes and Kelly, 1974, and Flannagan, 1975). The subject

matter areas for these research projects, as well as the age groups examined have differed. Cohan (1973) developed and field tested CBTE modules designed toward assisting student teachers in acquiring behaviors to promote critical thinking in their pupils. Results of this study indicated significant improvements were shown after completing the CBTE modules for these student teacher verbal behaviors. The results further indicated that the change in verbal behaviors were maintained over a period of time.

Hurst (1974) compared change in behaviors of elementary teacher trainees' knowledges, skills in, and attitudes toward inquiry teaching. Subjects were assigned to one of three treatment groups (1) individualized CBTE modules, (2) CBTE modules designed for groups, (3) traditional non-modular classroom instruction. Results of the analysis of pre- and post-testing indicated that subjects in both the individualized and grouped CBTE modules increased significantly for the variables of knowledges, attitudes and performances related to probing-inquiry behaviors. He further reported that a significant decrease in treatment subjects preference for a directive teaching style occurred. Hurst concluded that the flexibility of competency modules can effectively instruct pre-service teachers.

Levine (1972) investigated the differences of two teacher training methods as measured by pupil performance changes. One group was trained in a criterion-referenced

instructional model, the other group was trained in a traditional model. The results, from a pre-post-test analysis, revealed that the pupils taught by teacher trainees who had been instructed in the criterion-referenced model performed significantly better than did the pupils that were taught by the teacher trainee who had been instructed in the traditional model.

Edwards (1975) through random selection assigned students in a Professional Education Sequence to one of two micro-teaching treatment groups. One group participated in a micro-teaching experience, which was supervised by trained personnel along with self-instructional materials, but received no formal instruction. The results of the group comparisons indicated that there was no difference between supervised and unsupervised micro-teaching when utilized in conjunction with self-instructional materials to develop specific teaching skills.

Bullock, Dykes and Kelly (1974) attempted to develop a comprehensive listing of competencies that would be relevant to the education of behaviorally disordered children and youth. A three step approach consisting of developing a conceptual model that would reflect all aspects of the training program, delineate and arrange the specific goal competencies, and gather responses from trained teachers and supervisors of teachers of behavior disordered children. The data gathered from this study was used to (1) substantiate current

programs, (2) analyze existing programs, (3) analyze further competencies needed, and (4) to plan more relevant experiences for prospective teachers.

A study conducted by Flannagan (1975) was designed to provide a competency-based assessment of secondary teachers attitudes and perceptions of qualifications in content area reading instruction. An instrument was developed and sent to secondary teachers. The results of the study revealed that the competency-based instrument enabled teachers to respond precisely on their qualifications to teach reading in their content areas and it was recommended that pre-service and inservice training in teaching reading be content specific, and that this training be competency-based and field-centered.

Competency-based professional preparation programs in physical education have been examined by Freeman (1977), Coleman (1972), and Wikoff (1977). The context of these examinations ranged from curricular development to critical review of programs.

Coleman (1972) described the professional preparation program at Washington State University. Problems and questions regarding the value and practicability of CBTE were discussed by Freeman (1977). Some of the concerns he discussed revolved around measurement of teaching traits, excessive burdens placed on teachers, determining student tuition costs, and transfer of competencies from one institution

to another. Wikoff (1977) studied the frequency of use and amount of time spent in competency development for teaching at the secondary school. The 227 AAHPER Professional Preparation competencies were rated by college faculty and selected secondary school personnel. Based upon the results of the ratings, guidelines were proposed for curriculum revision in accordance with the competencies deemed essential by college faculty and secondary school personnel.

Studies to develop and study teaching competencies have been conducted by physical education (Chui, 1973; Crain, 1973; Miles, 1973; Boehm, 1974; Darst, 1974; Hamilton, 1974; Dodds, 1975; Grace, 1974, and Engelage, Scheer and Tuning, 1976). Chui reported a listing of functions and competencies of the entry teacher of physical education. This listing was intended to serve as a guideline in the planning of teacher training programs in physical education.

Crain (1973) compared the results of two groups of teacher education students, one group receiving traditional instruction in elementary physical education content and methods, and an experimental group progressing through a competency-based program. The results of the comparison indicated that the group scores for the competency-based group were significantly higher than for the control group on the categories of teacher knowledges, teaching skills, and pupil knowledge and performance. Based upon the results, the researcher concluded that it appeared that a competency-based

teacher training program in elementary physical education was superior to a program of traditional instruction.

Miles (1973) compared the effects of students enrolled in a competency-based elementary education course to a traditional lecture course. The results indicated that both groups gained in their knowledge concerning teaching elementary physical education, but the gain scores for the competency-based students were significantly higher than those students instructed by traditional means.

Darst (1974), Boehm (1974), and Hamilton (1974) studied the application and effects of a competency-based program on teachers and pupils. The studies utilized the same target teacher and pupil behaviors and similar intervention techniques at the elementary, junior high, and secondary levels. Teacher behaviors recorded included (1) positive and negative, specific and general reactions to on-task and off-task pupil behaviors, (2) positive and negative, specific and general feedback on skill attempts, (3) use of first names of pupils, and (4) feedback directed toward the class, small groups, and individual children. The results of the data analysis indicated that pupil behaviors were maintained or improved as student teacher behaviors were modified in the desired direction.

Dodds (1975) studied selected verbal patterns of four student teachers in physical education by use of a competency-based supervision model based upon peer assessment procedures.

Based upon the results of the changes in the student teachers' behaviors the investigator concluded that a data-based competency approach was a workable method for changing student teacher behaviors in physical education.

Grace (1974) conducted a study to investigate the concept of CBTE and its application to physical education. The researcher examined recent developments in teacher and physical education, operative CBTE programs, derivation of competencies, the instruments used to assess and evaluate CBTE students, and CBTE guidelines in physical education. The investigator concluded that to date most of the errors in CBTE have been in professional education, but as the competency-based concept of professional education in physical education matures, more programs can be expected to change.

Engelage, Scheer and Tuning (1976) described a competency-based student teaching program currently in operation at the University of Nebraska. This instrument, according to the authors, had been used successfully for several years to alleviate many of the problems associated with student teaching.

The competencies required of elementary school classroom teachers for the instruction of physical education was studied by Gober (1971). A modification of the systems analysis approach was used to identify and develop the professional competencies and the behaviors were then categorized into learning modules.

Ashcom (1974) conducted a developmental study in which he planned, developed, implemented, and documented an educational project. A series of workshops were conducted for Pennsylvania teacher training professionals to study generic teaching competencies at the entry level.

Church (1974) developed a core of physical education competencies, based on a theoretical model of desired pupil outcomes, which are the results of physical education instruction. A list of competencies was formulated and presented to a panel of experts for ratings. Based upon the tabulation of the results of the rankings, nine competency categories were devised, with instructional planning being the most important.

Nelson (1975) developed an evaluation instrument to be used by the Division of Physical Education at the University of Minnesota for the direct assessment of teaching competencies of physical education graduates. Competencies were formulated, and submitted to teachers who were asked to rank the competencies. Based upon the results of the rankings, strengths and weaknesses of the professional preparation program were discussed.

The literature presented in this section tend to indicate that Competency-Based Teacher Education programs are being utilized, to some degree, in a variety of subject matter areas. The studies also seem to indicate that competency-based procedures may be superior to traditional

methods of training teachers. Writings and studies describing a variety of means of formulating teaching competencies was also reviewed and presented. Observational techniques used for the recording of specific student teacher behaviors was studied, as well as modules designed as interventions for changing student teacher behaviors and their effects on pupil behaviors.

Competency-Based Instructional Systems

A systems format, adapted from Banathy's model (1968) is often used as the means of presentation for competency-based programs. Modules are developed and utilized for the organization and delivery of the information to the learners.

Banathy stated that there were three main aspects of systems, which are purpose, process and content. In clarifying these three aspects, he wrote that:

The sequence of purpose, process, and content is important because it implies priorities. Systems can be identical by their purpose. Purpose tells us what has to be done; it determines the processes that have to be undertaken. The content--the parts that comprise the system--is selected for its ability to accomplish the processes required in order to achieve the purposes of the system (Banathy, 1968, p. 4).

The structure of the instructional system can be separated into the following step progression: (1) formulate a series of objectives; (2) develop a criterion-based test to determine terminal proficiency; (3) analyze the learning task and pre-assess the learner; (4) consider all the learning

alternatives; (5) implement the designed system, and (6) change to improve the system (Banathy, 1968).

Singer and Dick (1974) have developed a systems model for teaching physical education. The model is presented in the form of a flow chart which contains the following interrelated components: (1) identify instructional goals; (2) conduct instructional analysis; (3) identify entry skills, knowledges, and characteristics; (4) develop performance objectives; (5) develop criterion-references evaluation instruments; (6) design instructional strategy; (7) select media; (8) develop or select instructional materials and implements; (9) conduct formulative evaluation, and (10) revise instruction.

A systems approach, according to Houston and Howsam is designed to deal with complex realities. They stated that:

It has been employed in development of both the delivery systems for learning opportunities and the management systems for records and accountability. The concept of feedback loops is particularly useful in designing instructional modules. The graphic device of flowcharting has proven invaluable in presenting the options available in an individualized instructional system. Like technology, however, the systems approach is but another enabler for competency-based instruction (Houston and Howsam, 1972, p. 5).

Lawson (1974) developed a performance-based theory which encompassed four major areas: (1) analysis of subject matter content in the terms of performance competencies; (2) diagnosis of pre-instructional behavior; (3) development

of the instructional sequence, and (4) development of criterion-referenced measurement instruments for assessing performance oriented tasks.

Netcher (1977) defined a learning system to be a logical arrangement of learning experiences which enables the learner to move from one experience to another in order to accomplish specified objectives. The instructional delivery system should utilize competency modules as the means by which the criteria is presented to the learners.

Edwards (1973) further supported the claim that competency-based programs should be based on a systems approach. He also indicated that learners should be able to progress at their own pace, however, it is essential that assessment be based primarily on the overt performance by the student.

Lawson (1974) developed a framework characteristic of a performance-based instructional theory. A task and skill analysis, in which subject matter content must be analyzed and specified in terms of behavioral competencies, is a requisite for performance-based instructional sequences.

Models and methodologies for the designing and developing of instructional systems have been proposed by Houston (1973) and Carpenter (1972). Houston (1973) proposed a ten-stage model, employing the systems approach, for designing competency-based programs. The ten stages proposed were: (1) specify assumptions or propositions; (2) identify

competencies; (3) delineate objectives; (4) indicate criteria levels and assessments modes; (5) cluster and order objectives for instruction; (6) design instructional strategies or modules; (7) organize a management system; (8) implement program trial; (9) evaluate instructional design, and (10) refine program. Carpenter's proposed model (1972) differed from Houston's in that the main thrust was directed toward developing a process for instructional designs containing the selected outputs of course length, student flow, and time-dependent requirements for resources. These outputs were related to three general classifications of inputs of the teaching institution, intended learners, and course objectives. These systems, once developed, would be stored in one central location, and institutions could request the learning system most applicable to their needs.

Providing many alternate ways for learning is planned and accommodated for in a competency-based program. Since the emphasis is on achievement of specified objectives, not on ranking learners, an effort has been made to increase the probability of learner success by providing different instructional routes from which the learners may select the ones most compatible with their learning styles (Burns and Klingstedt, 1973).

The content in a competency-based system is arranged in learning modules. The modules can be highly individualized or can provide instruction for a large number of students.

The learner is actively involved in modular instruction. Russell (1974) characterized modules as instructional packets containing a single unit of subject matter. Each module is divided into component parts designed to provide the students flexibility in achieving the stated competencies (Klingstedt, 1972; Houston and Howsam, 1972; Nagel and Richman, 1972).

Competency-based programs in physical education have been discussed by Freischlag (1974). He proposed a competency-based program model and sample learning module for a wrestling course.

Competency-based modular approaches to program development have been devised and proposed by Bullock (1975) and Annarino (1976). The basic framework of Bullock's approach (1975) was the concept that competency is modular, composed of a collection of parts that are distinct, yet related. Annarino (1976) proposed a curricular and instruction mastery learning model for secondary, college and university basic instructional programs in physical education.

In a report published by the Pennsylvania State Department of Education (1976), the Department outlined competencies and objectives which school districts are encouraged to use to develop quality programs. The competencies stated are minimal and relate to what most students should reasonably be expected to do according to their age and physical development by grades three, six, nine and twelve.

Studies conducted with the purpose of developing competency-based modules have been conducted in several subject matter areas. Waters (1974) developed six instructional modules to be used in a competency-based social studies methods course for elementary school teachers. Austin (1975) developed an instructional package, containing over 30 modules in science, for secondary school teachers from low income areas to enable them to construct competency-based modules for their students. Robinson (1975) developed and field tested and assessed a set of modules for use in a general biology course. He concluded that the use of modular instruction with a diversity of enabling activities can facilitate the learning of behavioral objectives specified for the course. McKinney (1976) conducted a study to develop and pilot test the competency-based method of instruction in two advanced typing classes. Results of the testing indicated that the students taught by the competency-based method increased their speed and improved their accuracy on straight copy material, and that the students expressed preference of this method over the conventional.

Schwarzenback (1975) conducted a study to develop and field test a competency-based learning package for a teaching methodology course in secondary school physical education, established on the instructional systems concept. The learning packages replaced the traditional classroom-textbook approach. At the conclusion of the course, the

subjects indicated that they preferred the learning package to the regular classroom method.

Comparison studies of competency-based instruction to traditional instruction have been conducted in various subject matter areas. Burnett (1975) conducted a study to determine the effectiveness of a competency-based instructional method for teaching college ceramics compared to a traditional instructional method. The results of a two-group comparison revealed that the competency-based approach increased learning achievement in ceramics over the traditional approach.

Ziebarth and Jones (1971) reported on the Secondary Education Individualized Instruction Project (SEIIP) which was an attempt to place the pre-service course on an individualized mode, using a systems-orientated, competency-based approach. Course material was divided into 12 units, and one group was taught by traditional instruction and one group by a competency-based instruction method. The results of the comparisons revealed that no significant difference was found between the two groups in final achievement or in the amount of gain in achievement between the beginning and end of the course. It was discovered, however, that the students who experienced the individualized instruction mode had more positive attitudes and reactions than the students who were instructed by more traditional means.

Studies have been conducted in physical education by Johnson and Leider (1975) and Steelman (1974). The purpose of Johnson and Leider's study (1975) was to determine the effect of two different teaching methods on the attitudes of college students participating in required physical education. Thirteen classes were instructed with a performance-based method, and 15 were taught utilizing the traditional methodology. The results of the two-group post-test design revealed that the performance-based instruction developed a better general attitude toward physical education as compared to attitudes developed by the traditional teaching method. All classes indicated that they disliked the assigned out-of-class work, which was a part of performance-based instruction.

Steeleman (1974) conducted a study to determine if different instructional modes effected significant change in variables in the three domains of learning. Results of the findings indicated that acquisition of knowledge and formulation of attitudes are not functions of instructional modes, however, the students instructed by the competency-based method, achieved higher bowling scores at the beginning of the psychomotor phase of the study and maintained superior scores throughout the duration of the study.

Auxter (1977) conducted a study to determine the effects of two training procedures on selected competencies related to the implementation of individualized programs in

physical education for the trainable mentally retarded. Two groups of students, enrolled in a teacher training course, were both trained by a competency-based approach, but one group following the post-test engaged in a discussion session and the other group was engaged in a simulated experience with immediate feedback to errors. Results of the comparisons indicated that there was no significant differences between groups on the results of training procedures for planning and management competencies, but there were significant differences between groups in favor of the simulation-immediate feedback groups in determining application of learning principles and the learning gain on sequential learned programming by handicapped children.

Writings and studies directed toward the formulation, development and implementation of competency-based instructional systems have been reviewed and presented in this section. Rationale and support of learning modules, as the means by which content is organized for presentation to the learners, have been discussed. Studies in which the competency-based method of instruction has been compared to the traditional have also been reviewed and presented. Based upon the studies cited, it appears that a competency-based instructional system is a feasible method of instruction, and that it can be adapted into a variety of curriculum program designs.

Review of Literature Summary

In this chapter a review of writings and studies related to instruction in badminton has been presented. This is followed by a review of research related to competency-based teacher education and in the final section of the chapter, pertinent research related to competency-based instructional systems.

In summarizing the results of the research related to instruction in badminton, it appears that differences were found in the effectiveness of using augmented feedback to assist in the development of skill learning and performance. It was reported that supplemental learning devices, in the form of loop films, may hasten skill learning for beginning badminton players, but that the use of videotape replay may not aid in the acquisition of skill for beginning level players, but may be of value for more highly skilled players. In comparing the results of studies reported which compared instruction by different teaching methodologies, it appeared that the individualized methodology was as effective as the traditional methodology for acquisition and performance of cognitive and psychomotor competencies.

Studies and writings reviewed relevant to CBTE indicated that this type of program may offer a viable and effective alternative to present means of assisting prospective teachers in the acquisition of teaching skills. The results of the studies reported tend to indicate that specific

teaching behaviors can be effectively altered through a competency-based intervention technique, and that these changes appear to result in pupil performance gains.

Various models pertinent to the development of competency-based instructional systems was presented in the third section of this chapter. It appears to be conclusive that competency-based programs should be based on a systems approach, and that learning modules containing specific behavioral objectives, be the means of organizing and presenting the subject matter competencies. The literature seems to indicate that the competency-based method of instruction is a feasible and effective methodology as well as a methodology which is adaptable to a variety of curriculum program designs. The literature also seems to support the claim that subject matter content can be categorized into learning modules thereby providing for individual differences in learning styles and learning rates.

The current study focuses on the development of a competency-based instructional system. It incorporates competency-based modules as the means of organizing and delivering the content. Specific competencies, in the form of behavioral objectives, as well as a variety of learning alternatives are presented in the modules.

Presented in Chapter III are the procedures for collecting and analyzing the data. Also included is a detailed description of procedural stages for data collection.

Experimenter rationale for development of level competencies is also described in Chapter III.

CHAPTER III

PROCEDURES FOR COLLECTING AND ANALYZING THE DATA

This study was designed to test the effects of a competency-based instructional system on the performance of beginning badminton players. A module design was used for the development of the competency-based format.

The research problems state: (1) can badminton skills be defined behaviorally and arranged in sequential order; (2) is a competency-based instructional system a feasible means for acquiring and mastering competencies in badminton; (3) What is the average number of trials needed for cognitive and psychomotor competency mastery in badminton; (4) can a competition skill evaluation instrument be developed and used reliably, and (5) is there a correlation between isolated skill acquisition and game playing evaluation. In order to test this, data were collected through a self-recording of the number of trials necessary for mastery of each stated competency, and through an assessment of game playing competency by means of a performance proficiency rating scale. The data were analyzed by (1) trials to criteria assessment and (2) multiple intercorrelations of selected skill (objectives) with the game playing evaluation modules and with other related objectives.

SUBJECTS AND SETTING

The subjects were the students enrolled in the physical education major-minor beginning badminton class, fall quarter, 1975, at Western Illinois University. The class consisted of twenty-four female undergraduate students, ages 18-21 years, ranging in class status of Freshmen through Seniors. None of the students in the class had been previously involved in a competency-based program, but fourteen had had some type of instruction in badminton prior to this study.

All of the students had elected to enroll in the class, but the class was not a specific requirement for graduation. It did, however, fulfill an area requirement in the women's physical education major-minor curriculum.

Western Illinois University is located in Macomb, a medium sized west central Illinois city. Approximately 15,000 students are enrolled in the University, with the majority of the students coming from the northern part of Illinois. The majority of the students are in residence, living on campus, or in the city of Macomb,

Brophy Gymnasium is a four-year old Women's Physical Education facility designed to house both activity and theory classes, as well as women's intercollegiate athletics and

intramurals. The gymnasium floor is a green tartan surface and is permanently marked for badminton, basketball, and volleyball. Three separate areas combine to form the total gymnasium area, consisting of 18 badminton, 6 volleyball, and 5 basketball courts. There is also the provision to tape lines for four temporary tennis courts. The walls are of a smooth surface which is relatively free of obstacles and were designed purposely for hitting practice against the wall. The ceiling is 28 feet, which is more than adequate clearance for high ceiling types of activities.

Eight courts were used for all badminton classes. Rackets and plastic shuttles were available for all students in the class. The students were also able to check out equipment during open recreation in the gymnasium or when the gymnasium was not scheduled for classes, intercollegiate practice or meets, or intramurals.

The instructional class met twice weekly for a total of 12 weeks. Each class session was 35 minutes in length, but the area was available for practice 20 minutes prior to the beginning of class and 20 minutes following class for those students wishing extra practice.

Pilot Project

A pilot project was completed during the Summer Quarter, 1974, in order to devise and field test the categories composing the rating scale. The experimenter and

another observer field tested the recording device in a University beginning, non major-minor badminton class. Data obtained from this pilot project were utilized in the establishment and definition of the rating scale categories. The rating scale and category definitions can be found in Appendix A.

Reliability of the tool was determined by totalling the number of agreements and disagreements in each category and inserting the sums of all categories into the following formula (Hall, 1971, p. 18).

$$\frac{\text{Agreements}}{\text{Agreements} + \text{Disagreements}} \quad \times \quad 100$$

The mean rating scale percentages ranged from 60.5 percent to 89.6 percent. The overall mean rating scale reliability percentage was 80 percent.

The rating scale was later used in a study conducted by Barker (1977). The inter-rated reliability was found to be .89, which was within the minimum acceptable standard of 80 percent established for her study.

DESCRIPTION OF THE INSTRUMENT

The module design (Houston, et al, 1972) was used as the means of developing and organizing the competencies. The investigator designed a series of 21 competency-based modules to be used as the primary learning source for this study. The modules were grouped into one of the following categories:

- (1) Shot execution
- (2) Cognitive development
- (3) Game play
- (4) Game play evaluation

Sixteen of the modules were designed to assist the learner in shot execution; one was directed toward cognitive development; four were designed to assist the learner in the development of competency during game play, with two of the four also serving as evaluation modules. The students were given an introductory session prior to beginning the first module which consisted of an explanation, by the instructor, of how the class would be conducted and organized. At this session they also completed an information sheet which contained: (1) name; (2) campus address and telephone; (3) year in school; (4) high school graduated from; (5) any previous badminton instruction; and (6) what they considered their entrance competency level in badminton.

Each student was given a copy of each module, one at a time, and sheets for self-recording of skill attempts.

Each module contained the following parts:

1. Rationale: A brief description as to the importance and significance of the development of the stated competencies, as well as a description of the execution, and uses for the shot(s) during game play.

2. Time Allotment: This was an estimated amount of time necessary for the completion of each module.

3. Prerequisites: Competencies the student must have mastered prior to beginning work or entering each successive module.

4. Pre-Assessment: A student requested, instructor conducted evaluation requested when the learner believed he/she possessed the necessary skills and/or knowledges necessary to demonstrate mastery of all or part of the stated competencies. If the student successfully demonstrated mastery, then the module competencies had been met.

5. Level Objectives: The statements, written in behavioral terminology which clearly indentified to the learner, the competencies to be mastered and demonstrated.

6. Instructional Activities: Learning assistants suggested to aid the learner in mastering the stated objectives.

7. Post-Assessment: An evaluation requested by the student and conducted by the instructor, to determine whether or not the student had mastered the stated objectives. If the student successfully passed the evaluation, he/she proceeded to the next module, if the evaluation was not successfully passed, he/she was required to continue working on the objectives until they could be demonstrated, or a remedial path was suggested by the instructor.

8. Remediation: Activities and corrections outlined by the instructor which were designed to aid the student who could not master the level objectives.

The exception to each student receiving one module at a time was due to the length of some of the modules, the students were sometimes given one section at a time, however, the receiving of the next section or next successive module was contingent upon the satisfactory completion of all level objectives and post-assessment in the previous one. Each student moved at his/her own pace through the execution of the modules, but keeping in mind the number of remaining modules to be completed by the end of the quarter.

In addition to a copy of each module, and self-recording sheets, a teaching block plan (Appendix B) was given to each student at the beginning of the quarter. This plan contained a tentative teaching schedule for each class period. The student had the option to select the teaching session as one of the learning alternatives, but was not required to attend any of the teacher-conducted instructional sessions.

The following modules were utilized in the order of presentation:

(1) History, Equipment, Grips. This module was designed to acquaint the student with a basic core of information relative to the origin of the sport, description for selection, use and care of equipment, description of the playing surface and flight trajectory.

(2) Footwork and Court Positioning. The competencies stated in this module were designed to assist the learners in

the development of body efficiency of movement and control, as well as the development of spatial and kinesthetic awareness of the body in relation to the court and to the shuttle.

(3) Short Serve for Doubles. Competency objectives designed to assist the learner in the execution and placement of the short serve for doubles.

(4) Receiving the Short Serve for Doubles. Competency objectives designed to assist the learner in receiving the short serves using a variety of shots, as well as court movement following each shot.

(5) Short Serve for Singles. Competency objectives designed to acquaint the student with the execution and uses of the short serve for singles play.

(6) Receiving the Short Serve for Singles. Competency objectives designed to acquaint the learner with shots appropriate for returning the short serve during singles play.

(7) Long Serve for Singles. Competency objectives designed to assist the learner in the execution and placement of the long serve for singles.

(8) Receiving the Long Serve for Singles. Competency objectives designed to acquaint and assist the learner in the uses, execution and placement of various shots used to return the long serve during singles game play.

(9) Long Serve for Doubles. Competency objectives designed to assist the learner in the execution and placement of the long serve for doubles.

(10) Receiving the Long Serve for Doubles. Competency objectives designed to acquaint and assist the learner in the uses, execution and placement of the shot possibilities used to return the long serve for doubles game play.

(11) Modified Serve Game. The competency objectives in this pre-game module were devised to assist the learner in the execution and placement of serves, and the receiving of serves, as well as court movement in a competitive situation. The learner was also introduced to scoring during singles game play.

(12) Drive Serve. Competency objectives which focused on assisting the learner develop the skills necessary for the proper and effective execution of the more advanced serves for game play. This module was required for students completing Levels II and III, but was optional for those students in Level I.

(13) Receiving the Drive Serve. Objectives devised to assist the learners in executing shots appropriate and advantageous for returning the driven serve during game play.

(14) Flick Serve. Objectives devised to assist the learner in mastering an advanced serve to be used during game play. This module was required for those students completing Level III objectives, but was optional for those students in Levels II and I.

(15) Receiving the Flick Serve. Objectives devised to acquaint the learner with the types of shots that could be used for returning the flick serve during game play.

(16) Backhand Serve. Objectives designed to acquaint the learner with an advanced serve which could be used to serve short and long. This module was required for Level III students, but was optional for students in Levels II and I.

(17) Overhead Clear. Competency objectives designed to assist the learner in the execution of the overhead defensive and attacking clears.

(18) Overhead Drop. Competency objectives designed to assist the learner in placement of the overhead drop shot.

(19) Smash. Competency objectives designed to assist the learner in the execution of the forehand smash.

(20) Singles Game Play Evaluation. The objectives in this module were designed to assist the learner in developing proficiency in doubles game play, as evidenced by a pre-determined number of games to be played prior to being evaluated by the instructor. Objectives were also devised to assist the learner in developing knowledges and demonstrating mastery of doubles court coverage positions and game playing strategies.

There was one exception to the above stated order of modules. The strategy section for modules 20 and 21 was given to the students after successful completion of module two. The objectives stated in this section, however, were not completed until the student completed modules 20 and 21. In addition, each student completed a take-home rules and

strategy test, which they returned during the final examination period. Completion of this test fulfilled an objective in the evaluation modules. The strategy section was given to the students early, but completion delayed until the end of the quarter in order to allow the learners' sufficient time to gain the knowledges necessary for the completion of the written examination.

Self-Recording Sheet

Each student was given a sheet for self-recording of skill attempts for every objective in all modules (Figure 1, p. 63). The following was the format for the self recording:

	Name _____
	Module Number _____
	Level Number _____
Objective _____,	Date _____
Objective _____,	Date _____

Figure 1

The subjects were informed by the investigator that they should record their own skill attempts immediately following the completion of each objective. They were also instructed to work with a partner in the completion of the objectives. There was no attempt by the investigator to match partners, the determination was by student selection each class period.

The investigator instructed the students to keep an accurate recording of all skill attempts, both successful and unsuccessful for all objectives. The students were

continually reminded that the number of skill attempts recorded was not a factor in any way in the determination of a final grade.

Data Collection

The students were responsible each class period for picking up a copy of the module they were working on and their self-recording sheets. When entering a module the student could select from a variety of learning alternatives or instructional activities, including attending the instructional session conducted by the investigator. The instructional activities that the investigator felt were the most complete descriptions of the skill were noted by an asterisk (*). It was not a requirement that the student select those sources, it was only suggested that they might be the most beneficial. The students worked at their own pace each class period, and came to the instructor or student assistant when they determined they were ready for the post-assessment, which indicated that they had mastered all of the stated level competencies. At the conclusion of every class period, the students returned to the instructor their modules and their self-recording sheets, or indicated that they wished to keep these items so that they could continue working on mastering the competencies outside of class time. All class periods were organized in a similar manner, with the only exceptions being when the instructor conducted a

required session, in which information pertinent to all student was given. The number of students attending the instructional session ranged from 22 to 9, with more students attending these sessions at the beginning of the term.

Students gathered data for themselves daily by utilizing a pre-determined sheet for the self-recording of skill attempts directed toward the completion of the stated level objectives. When a student successfully completed all level objectives in the module, he/she came to the instructor and requested a post-assessment. During the post-assessment, the instructor selected certain level objectives to be demonstrated by the learner. If the student had mastered the necessary competencies, as determined by the instructor, to successfully complete the post-assessment, then he/she would advance to the next successive section of the module, or to the next module. If the student failed to complete the post-assessment, then he/she followed the remediation section of the module or followed an outlined plan from the instructor to correct the weaknesses and/or deficiencies. When the student felt he/she had mastered the necessary competencies, he/she requested another post-assessment.

Each subject's number of trials for each objective were tabulated and recorded on a master sheet for each subject (Appendix C).

A record was kept by the instructor of the number of attempts necessary for the completion of the cognitive module

(Module 1), and for the take-home test, which was a part of the evaluation modules. Each time the student failed to complete the test (post-evaluation) with the necessary stated percentages, an unsuccessful attempt was recorded by the instructor, but there was no limit on the number of trials each student had to complete the written tests. An example of this recording sheet can be found in Appendix C. There was, however, a deadline data for the completion of the test for the Rules and Court Diagram objectives in Module 1. It was determined by the instructor for the student to have a basic knowledge and understanding of the court dimensions and rules of play prior to being able to enter the game playing modules.

There was no attempt to separate the psychomotor, cognitive, and affective objectives within each skill execution module during the post-evaluation.

Level Objectives

Three levels of performance were provided for the learners unless it was stated differently in the module introduction. Level I objectives were designed to assist the learner in the mastery of the basic mechanical components of the skill; Level II objectives were more complex and required the learner to be able to perform the skill beyond the learning stages, and Level III objectives were the most difficult to perform and required the learner to be more proficient in

executing the skill in a more structured, yet sometimes divergent, situation.

In the modules which contained objectives directed primarily toward mastery of shot execution, a skill sequence was developed for practice and performance. Each skill sequence combined the mechanical execution of the shot with movement on the court into a total movement pattern. There were three parts in the skill sequences: (1) beginning in a stationary position on the court and moving to a position to hit the shuttle; (2) the mechanical stroke execution, and (3) movement back to the designated court position. The only exceptions to the above stated three part sequences were the serves which, by the rules of play, had to originate from a stationary court position. The skill sequence for these objectives contained two parts: (1) stationary mechanical shot execution, and (2) court movement to the designated position.

In determining the hierarchy of complexity, in addition to the skill sequences, additional components of consistency, accuracy, and placement were combined as a part of the psychomotor objectives. One or several of these components were added as a part of the skill sequence, stated as mainly convergent applications, after the learner had demonstrated proficiency in executing the stroke in a controlled, isolated situation. Since the Level I objectives were designed and directed mainly toward the learner gaining

basic skills and knowledges so that the stroke could be performed in an isolated situation, rather than always requiring the performer to execute the entire skill sequence, the objectives were arranged in a progressive step-by-step mechanical breakdown of the skill, with the step-size between performance variables being minimal.

The Level II objectives were more complex than those in Level I. A fewer number of the total set of objectives were designed to assist the learner in basic skill acquisition and shot mastery. In order to enter the Level II objectives, the learner must have been able to perform the shot in an isolated situation, or fulfill the objectives stated in Level I which were designed to assist the learner in mastery of the basic execution of the stroke. The remainder of the objectives in Level II included consistency and accuracy in performing the strokes, combined as a part of the total skill sequence. An example of the difference between a Level I and a Level II objective would be, in Level I the student would be instructed to serve a short serve for doubles into the right receiving court, with the shuttle landing no more than 18 inches behind the service line. In Level II the students would be instructed to serve three out of five short serves for doubles into the right receiving court, with the shuttle landing no farther than 18 inches behind the service line.

Distance was also a component that was considered when devising objectives by level. Using the above stated example, a distance factor could have been, in Level I the shuttle had to land no farther than 18 inches behind the service line, for Level II, the distance may have been decreased to 15 inches, and in Level III, to 12 inches. The shorter the distance, the more accurate the server must be in placing the shuttle into the area. If a consistency factor was added as a second component to the performance of the serve, it was considered to be an even more difficult skill execution.

Placement of the shot was a difficulty component added to the skill sequence after the student has mastered the mechanical aspects of shot execution including the stated distance criteria. The criterion in the objective would indicate the area of the court the shot was to be placed. The size of the placement area varied according to the level of the performer.

The objectives devised for those students working toward a third level of mastery contained the most difficult skill sequencing, as was indicated in the above stated example. A limited number of objectives were devised to assist the learner in basic stroke mastery. The majority of the objectives were arranged so that the difficulty increased with each objective and consistency, accuracy and placement were included as a part of the total skill sequencing.

Remediation objectives, or self-correctional skills directed toward correction of deficiencies or weaknesses were also devised for most skills. These corrective procedures formalized as behavioral objectives, were arranged in a sequential progression for each of the stated problems. If a student was unsuccessful at completing the level objective, he/she was instructed to exit from the level objective and follow the recommended remediation process. The last remediation objective was almost identical in criterion to the level objective, thereby narrowing the gap in the step-size between the remediation objective and the level objective. After completing the remediation objectives, the student was instructed to return to the level objective or enter a different remediation route.

The rules of play and game strategies were included in each appropriate module. It was decided by the investigator that the rules and strategies were to be a part of the associated learning pattern, rather than entirely separated into separate modules.

Game Playing Rating Scale

A game playing rating scale was devised by the investigator to be used to record and assess game playing competency (Appendix A). The rating scale consisted of the following components:

1. SERVE: There were two categories for recording each serve: Effective or Ineffective.

2. RETURN OF SERVE: There were two categories for recording each return of serve: Effective or Ineffective.

3. SHOT CHOICE DURING RALLY: There were two categories for recording each shot during the rally: Effective or Ineffective.

4. FAULT: Any error, defined by the rules and the investigator, which occurred during play, was recorded as a fault.

The game playing evaluation modules were conducted and recorded during singles and doubles play, by the investigator and a physical education major student, who was completing a pre-student teaching field experience in the class. Two recorders were necessary in order to record playing percentages for all players. The student was familiar with the scale and had used it prior to the game play evaluation module.

Percentages were computed for each rating scale category by counting and tabulating the number of effective to ineffective serves and return of serves, shot choices during rallies, and faults.

Analysis and Research Design

The subjects recorded the number of trials per objective for each module. These raw data were then tabulated, categorized and recorded on a master sheet for each subject (Appendix C). In tabulating the number of trials per objective, the following formula was utilized:

(1) Cognitive. Those objectives which were designed toward assessing the learners' knowledge expressed either in writing or verbally, or demonstrating basic stroke mimetics or court positioning. Each attempt at fulfilling the objective was recorded as one trial.

(2) Criterion Reference of Three Out of Five Times. Competency objectives designed to assist the learner in skill development and performance consistency and accuracy. The number of trials needed to complete three out of five attempts was recorded, with five attempts counting as one trial.

(3) Criterion Reference of Five Times. Competency objectives designed to assist the learner in skill development and performance consistency. The number of attempts needed to complete successfully the stated behavior five times, were recorded as the total number of trials.

(4) Criterion Reference of Five Consecutive Times. Competency objectives aimed at a high performance level. The number of attempts needed to complete five consecutive trials was recorded, with each set of five attempts counting as one trial.

(5) Criterion Reference of Three Times. Competency objectives designed for the lowest performance level. The number of attempts in order to successfully complete three repetitions of the skill were recorded as the total number of trials.

(6) Criterion Reference of Four Times. Competency objectives designed to assist the learner in skill development and consistency. The number of attempts needed to successfully repeat the behavior four times was recorded as the total number of trials.

(7) Criterion Reference of Six Out of Ten Times. Competency objectives designed to test the consistency for a larger number of continual attempts of the specified behavior. Each set of ten attempts was recorded as one trial.

The criteria of placement of specific psychomotor behaviors was added to several of the above stated skill development objectives. The difficulty of the assigned task was dependent upon the learners' self-chosen level.

Data were analyzed by a descriptive analysis of comparison of means and standard deviations. Overall summary data were recorded for each level group mean and standard deviation scores for all objectives in each module (Appendix D).

In order to discover the number of attempts needed for cognitive and psychomotor mastery, a trials to criterion assessment was analyzed through between group comparisons of means and standard deviation scores.

Percentages for each category on the rating sheet were computed for each subject and grouped according to level. Mean scores were computed for each rating scale category for

each level for both singles and doubles game play. A comparison of level-group mean percentages was made for singles and doubles play and for the rating scale categories.

The differences in performance rate were determined by a comparison of group-level mean scores for the criterion referenced objectives of (1) three out of five times; (2) five times; (3) five consecutive times; (4) three times; (5) four times, and (6) six out of ten times. In order to determine if there was a difference between the number of trials needed for each level for serving and for receiving for objectives of the above stated criteria, means were computed and compared.

In order to determine if the relationship between selected psychomotor objectives and game playing evaluations was significant, the Pearson Product Moment Correlation Coefficient Technique was applied.

CHAPTER IV
ANALYSIS, DESCRIPTION, AND DISCUSSION OF DATA

A competency-based instructional system for teaching and coaching badminton, composed of 21 modules, was designed and developed by this investigator.

In order to determine each subjects' trials to criterion, data were collected each class period through self- or peer-recordings of the number of attempts necessary to complete the stated level objectives in each module. The number of trials was then counted and recorded on a master sheet for each subject (Appendix C). These raw data were then grouped by level, and mean and standard deviation level-group scores were computed for each objective in each module. This overall summary of the data is reported in Appendix D. This summary indicates an overall view of the level-group mean scores, per objective, per module, with no attempt to differentiate or categorize the objectives by criterion reference.

To compute the number of trials per criterion per level, the psychomotor modular objectives were categorized according to criterion reference of (1) three out of five trials; (2) five trials; (3) five consecutive trials; (4) four trials; (5) three trials; (6) six out of ten trials.

Mean and standard deviation level-group scores were computed for each of the different criterion referenced objectives and behavior variables. A trials to criterion assessment was analyzed through between group comparisons of level-group means and standard deviation scores.

The cognitive objectives were grouped separately from the psychomotor objectives, and were arranged and recorded by order of module presentation. Mean scores were computed for the three levels and comparisons were made between level-group mean scores.

Percentages for the rating scale categories were computed for the game-playing evaluation modules. These percentages were then grouped by level, and level-group mean and standard deviation scores were computed and compared for each category for singles and doubles game play evaluation.

In order to determine if the relationship between selected psychomotor objectives and game playing evaluations was significant, the Pearson Product Movement Correlation Coefficient Technique was applied to the data.

Skill Definiation and Arrangement

The investigator designed a series of 20 competency-based modules to be used as the primary learning source for skill and knowledge acquisition in badminton. The modular format was used as the means of developing, organizing, and presenting the competencies. A flow chart which illustrates

the learner's choices and movements through the modules used in this investigation is shown in Figure 2 (p. 78).

A list of badminton skills and knowledges was formulated and grouped according to zone of origin. This grouping is presented in Figure 3 (p.79). From this grouping, the skills and knowledges to be included were selected, organized, and categorized by stroke association, which is presented in Figure 4 (p. 80). The skills were then arranged sequentially for presentation, in a hierarchy from simple to complex. Each skill was then broken down mechanically into its component parts, and each part was presented in the form of behavioral objectives.

Three levels of performance were provided for the learners. The objectives in Level III were designed to be the most difficult thereby requiring a higher skill level to master the stated competencies. The objectives within each level were arranged and sequenced to progress in difficulty. The last objective(s) in each level was designed to be as close as possible to actual game play. It was hoped that by designing and structuring the learning sequence in this way that the size of the interval from isolated practice of skills to associated learning through practice of combinations of shots to actual game play would be minimized.

The serving modules, numbers 3, 5, 7, 9, 12, 14, and 16, were followed by modules designed to assist the learner in receiving the serve (modules 4, 6, 8, 10, 13, and 15).

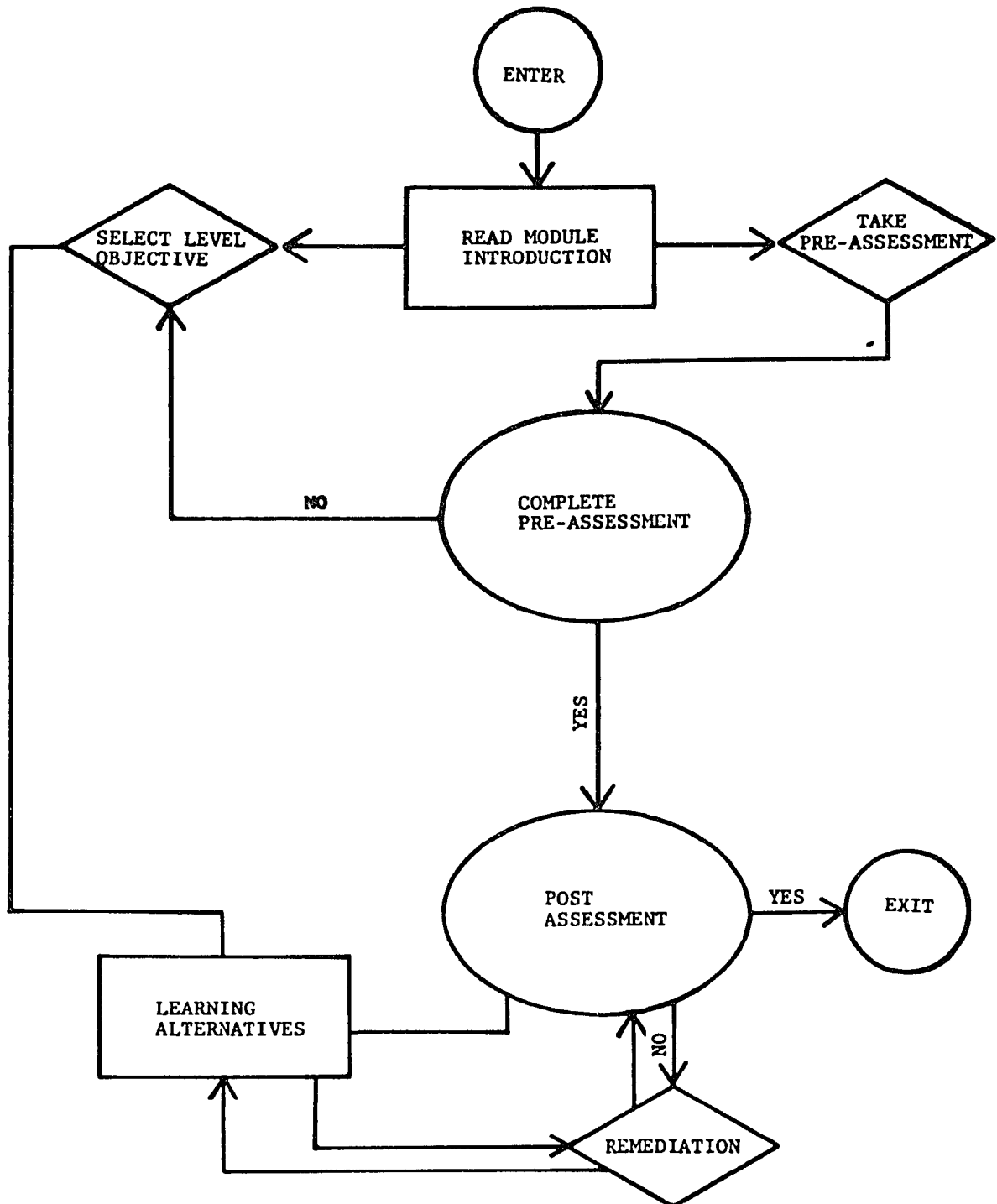


Figure 2. Sample Flow Chart for Modules.

Adapted from Nagel (1972)

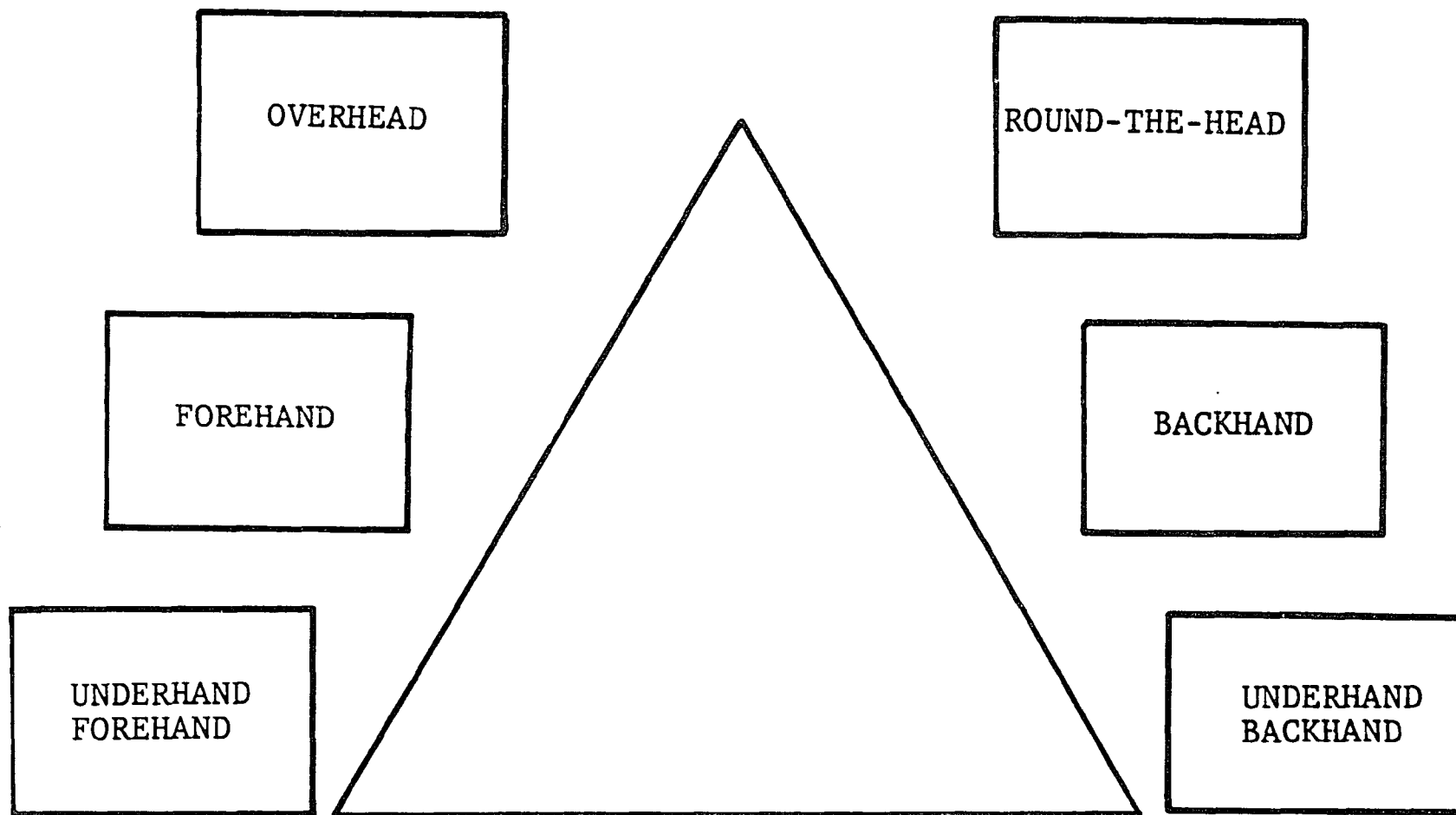


Figure 3. Zones for Shot Origins.

Adapted from Burris and Olson (1974)

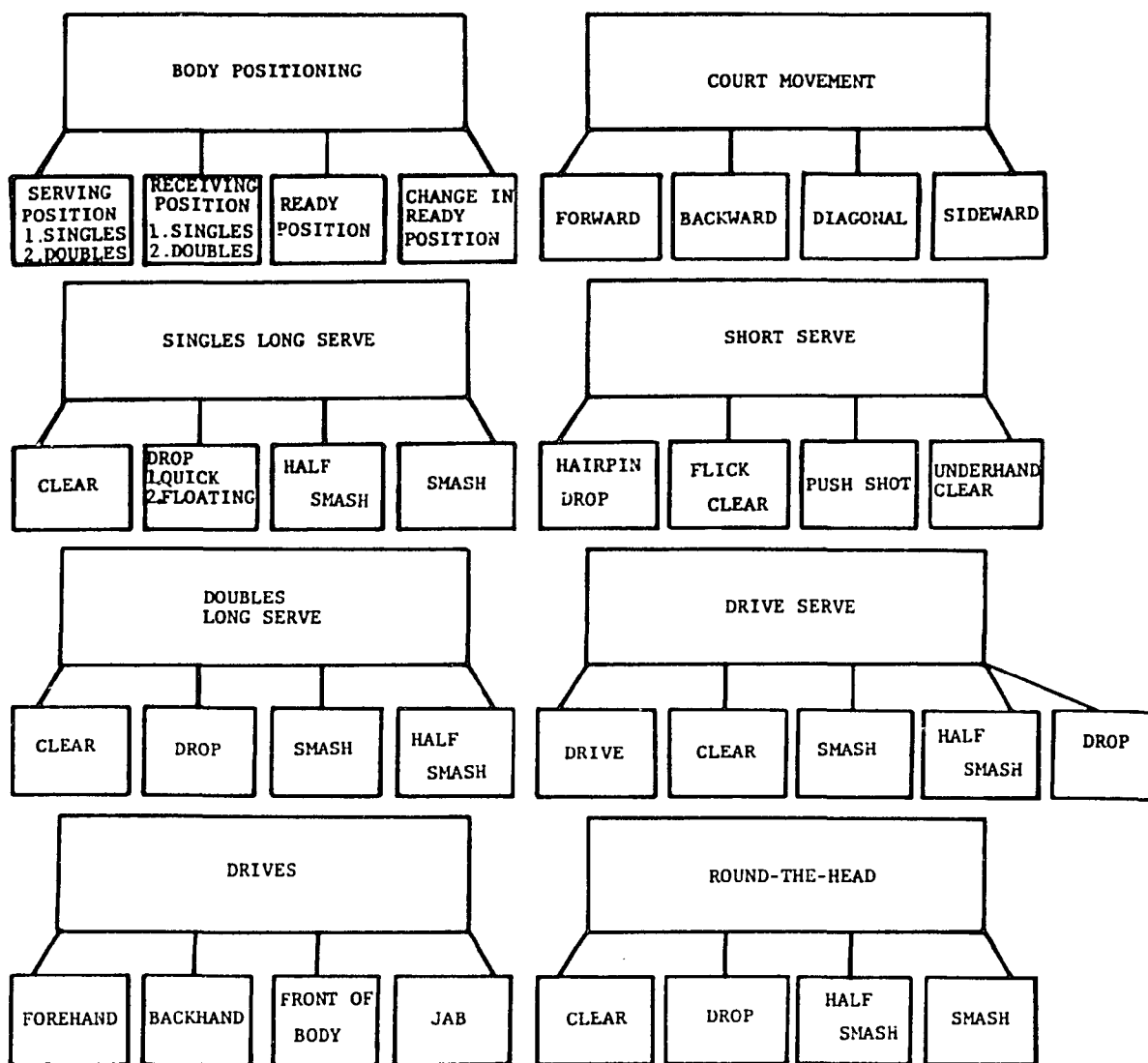


Figure 4. Associated Stroke Possibilities.

This arrangement of content was devised so that the learner could associate and practice various returns for the serves, as well as the actual serve. Through this arrangement, it was hoped that the learner would develop a more complete picture of the actual competitive game, and would not isolate practice of the shot entirely into an isolated situation. It was also the purpose of the researcher, in designing the sequencing in this manner, to structure the practice of the skills in a convergent application and progress to a divergent environment so that the transfer of the isolated practice situations to the competitive game situations had been sequentially planned and provided for, so that the response during the game situation would become more automatic, since they had previously been practiced in a controlled situation which was as close as possible to the actual game.

Based upon the completion of the competency-based modules presented in Appendices E-U, it appears that the selected badminton skills can be defined behaviorally and arranged in sequential order. It also appears that the content can be modularized, and performance objectives for different skill levels can be developed, with the objectives within each level progressing in difficulty.

Acquiring and Mastering Competencies

Students in a physical education major-minor beginning badminton class were the subjects for the study. The

students ranged in academic class standing from freshmen through seniors.

An introductory session was held the first class session where directions were given about the day-by-day class procedures. A description of the competency-based system was presented by the investigator and the three-level format was explained.

Due to the university policy of assigning letter grades for completed course work, the instructor had to match final letter grades with the difficulty components of the level objectives. The students were told that if they demonstrated mastery of the minimum course requirements, Level I objectives, in all required modules, they would receive a final grade of C. Successful completion of Level II objectives as stated in the Level II requirements, would earn a final grade of B, and a final grade of A would denote completion of Level II objectives and requirements. If the student failed to complete the minimum course requirements, he/she would receive a final grade of F.

A provision was also made to allow for individual competency mastery rate. The students were told that they should select, before entering the first module, which mastery level they would be demonstrating. After this selection, they could, if needed, fulfill a lower level of objectives in two modules. They were not, however, allowed to select a lower competency level in those modules in which it was

stated in the introduction or the prerequisites that they must fulfill this module in their designated level.

The students were instructed to read the introduction section of each module prior to entering their selected level objectives. If the student met the stated prerequisites they then entered their level objectives and progressed through the module at their own pace. Students, who after reading their level objectives, felt they could demonstrate mastery without progressing through the level objectives, could come to the instructor and request a pre-assessment. During this evaluation the instructor could select to see any of the level objectives demonstrated. If students successfully completed this evaluation, they could proceed to the next higher level of objectives, or to the next successive module. If they failed to complete this evaluation, they began working through the level objectives, or followed a remediation program outlined and suggested by the instructor.

Students progressed through each module at their own speed. Individual progress was recorded by means of (1) self recording of skill attempts; (2) peer assessment when indicated, and (3) post-assessment by the instructor.

When the students had successfully completed their level objectives in each module, they came to the instructor and requested a post-assessment. The instructor could request to see all, some, or none of the level objectives demonstrated. If the student had mastered the necessary

competencies, as determined by the instructor, to successfully complete the post-assessment, then they could advance to the next successive section of the module or to the next module. If the student failed to successfully complete the post-assessment, then they followed the remediation section of the module or an outlined plan from the instructor to correct the weaknesses and/or deficiencies. When the student felt they had mastered the stated competencies, they requested another post-assessment.

All students had to complete all of the required modules with at least a minimum competency level. Required modules were numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17, 18, 19, 20, and 21. Modules 12 and 13 were optional for those students in Level I, but were required for Levels II and III. Modules 14, 15, and 16 were optional for those students in Levels I and II, but were required for students completing a Level III mastery. A summary of the required modules for each level is presented in Table 1 (p. 85).

Discussion

The learners appeared to be able to utilize the class periods in a self-directed manner. The majority of the students indicated that they had never been involved in any type of an individualized program, thereby had not been exposed to self-paced and self-directed learning. The students seemed to adjust and adapt to this new learning environment

TABLE 1
REQUIRED MODULES FOR EACH LEVEL

Level	Final Grade	Module Numbers	
I	C	1	10
		2	11
		3	17
		4	18
		5	19
		6	20
		7	21
		8	
		9	
II	B	1	10
		2	11
		3	12
		4	13
		5	17
		6	18
		7	19
		8	20
		9	21
III	A	1	10
		2	11
		3	12
		4	13
		5	14
		6	15
		7	16
		8	17
		9	18
		19	
		20	
		21	

and enjoyed the experience. Several of the students verbally indicated to the instructor that they liked the process to self-pacing, along with the provision of being able to come to the instructor for assistance. They also indicated that they felt less threatened in this type of a structure than they did in traditional classes. The idea of evaluation following completion or mastery of each stroke was unique for most of the students. They also verbally expressed liking this type of an evaluation process, and felt that it benefited them to practice the skills in the competency-based manner. Also being able to continue working until an objective had been mastered appealed to them, rather than being tested, by a skill test on selected skills. Due to this total evaluation, it was felt that the mastery assessment was more accurate and meaningful to the learner.

Based upon 21 learners completing their self-chosen level objectives in all the modules which in turn provided competency mastery to complete an instructor conducted post-assessment, it appears that a competency-based instructional system was a feasible means for acquiring and mastering beginning competencies in badminton. Also, based upon the learner's completing all the modules, it appears that this type of an instructional system can be adaptable to a traditional time-grading period curriculum design.

Trials to Criterion Needed for Competency Mastery

Data collected on individual students were trials to criterion. In order to determine each subject's number of trials per criterion, data were collected each class period through self- or peer-recordings of the number of attempts necessary to complete the stated level objectives in each module.

A trial was defined as a set of attempts as defined by the criterion measure in each objective. After three unsuccessful trials at completing an objective, the student was instructed to not continue working on the objective, but instead to exit from the level objectives and enter the recommended outlined remediation process for correction of weaknesses and/or deficiencies, or go directly to the instructor for assistance.

The number of trials per criterion was counted, tabulated and recorded on a master sheet for each subject, which can be found in Appendix C. These raw data were grouped by level and by criterion. Level-group mean and standard deviation scores were computed for each objective. The data were then analyzed through between level-group comparisons of means and standard deviation scores for each criterion.

Cognitive. The objectives which constituted competency mastery in knowledge pertinent to badminton were

classified into one of the following divisions:

- (1) Written examinations, court diagrams.
- (2) Selection and care of equipment.
- (3) Description of court positioning for serving in singles and doubles.
- (4) Description of court positioning for receiving in singles and doubles.
- (5) Descriptions of mechanical analysis in executing the shots.
- (6) Analysis of the advantages and disadvantages of the use of various shots during game play.
- (7) Description of singles and doubles playing strategies and court coverages.

There was no attempt by the investigator to equate the total number of cognitive, affective, and psychomotor objectives within the modules or within the levels. There was also no attempt to equate the number of cognitive and psychomotor objectives which the instructor requested to see demonstrated during the pre- or post-assessment.

Rules of play and court strategies were, as much as possible, combined with the stroke or court movement sequencing, so that the learning would be associated and sequenced.

Data for the cognitive objectives were recorded and tallied onto a master sheet for each subject (Appendix C). The instructor recorded the number of attempts necessary for

completion of the written examinations. The attempts necessary for completion of the remainder of the objectives were collected through self- or peer-recordings.

These raw data were counted and grouped according to level and criterion. Level-group means and standard deviation scores were computed for each objective (Appendix D).

The results indicated that the mean number of attempts to fulfill the cognitive objectives in which the objective instructed the learners to state orally to a classmate the serving and receiving court positioning, mechanical analysis of shots, description of the uses of various shots during game play, procedures for selection and care of equipment, was one trial. The objectives in which the students were orally to state descriptions of singles and doubles court coverages which were appropriate to the described situation, and also strategies for shot selections and placement, was also one trial.

A between group comparison was made of level-group mean scores for the number of attempts necessary for completion of written examination objectives. Diagraming the playing court, with 100 percent accuracy, including naming the designated lines and court dimensions was one of the written examination objectives. Level I required 2.00 mean trials to complete this objective while Level II required 1.40 mean attempts. Level III required the highest number of trials, with a mean score of 2.07 trials. This data is presented in Appendix D.

The data indicated that it took a mean of 1.00 trials for the students in Level I to successfully complete a written examination covering the history of badminton, with 90 percent accuracy. Level II subjects required a mean of 1.80 trials to successfully master, with 90 percent accuracy, competencies to complete questions over the history of badminton, plus an additional examination section on care and selection of equipment, and a third additional examination section on values gained through participation. Appendix V contains copies of these written examinations.

The strategy examination was given to the students to take home and complete. They received the examination during the last regularly scheduled week the class met, and it was to be returned no later than the time the class met during the final examination week. Because of the nature of this type of examination, the mean number of attempts was not computed, nor was it included in the total number of attempts necessary for each level to complete cognitive written examination objectives.

Psychomotor Objectives

Data were collected on individual students through self- and peer-recordings of the number of attempts necessary for completion of the objectives with the various criterion references. Completion of the objectives, and successful completion of the post-assessment, or the pre-assessment

without working through each level objective, was considered to denote mastery of the stated level competencies.

The number of trials necessary for completion was recorded on the subjects' self-recording sheets. This was later transferred to a master sheet for each subject (Appendix D). The raw data were then counted and grouped by level. The modular objectives were then categorized by criterion reference, and level-group mean and standard deviation scores were computed for the three levels. An overall grand mean was computed for each level for each of the criterion referenced objectives.

Criterion reference of three out of five times. Data were collected for the number of trials required to complete the criterion of three out of five times. A trial was defined as a set of five skill attempts.

Data were grouped by level, and mean and standard deviation scores were computed for each objective in each module. Table 2 (p. 93) reports the grouped data for objectives containing the criterion of three out of five times for Level I. Level II data is presented in Table 3 (p. 94) and the data for Level III is presented in Table 4 (p. 95).

From the limited data available for Level I, the mean number of trials required to complete the objectives was 1.00. This indicated that it required only one trial for the students to complete the objectives with the criterion reference of three out of five times.

The mean number of trials for Level II ranged from 1.20 to 3.07. Level III's mean number of trials ranged from 1.00 to 3.50. The highest mean number of trials for both Level II and Level III was recorded for an objective in the long serve for singles module. The objectives were not identical but both required the server to deliver the service into the right receiving court. The Level II objective contained accuracy and placement components, while the Level III objective required the learner to apply skills in a more divergent environment.

A between level-group mean scores comparison was analyzed through categorizing each of the level means into three categories: (1) serving objectives; (2) receiving objectives, and (3) overhead clear objectives. Overall level-group mean and standard deviation scores for each of the three categories were computed and are presented in Table 5 (p. 96).

Level II required the highest mean number of trials in order to master the serving objectives. The number of trials for Level II was 2.13. Level III needed 1.93 mean number of trials to master the serving objectives, and Level I required 1.00 mean number of trials.

Level III required the highest mean number of trials in order to master the receiving competencies. The mean number of trials for Level III was 1.56. Level II required

TABLE 2
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL I FOR CRITERION OBJECTIVES
 OF THREE OUT OF FIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL I MEAN	STANDARD DEVIATION
3	Short serve-	8	----	----
		Doubles 9	----	----
7	Long serve-	8	1.00	0
		Singles 9	----	----
10	Long serve-	3	1.00	0
		Singles receiving 4	1.00	0

*A set of five attempts was recorded as one trial.

TABLE 3
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL II FOR CRITERION OBJECTIVES
 OF THREE OUT OF FIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL II MEAN	STANDARD DEVIATION
3	Short Serve-Doubles	1	2.40	4.43
		2	1.40	.52
		3	1.56	.78
		4	1.22	.67
4	Short Serve-Doubles Receiving	3	1.40	.70
		4	1.30	.48
7	Long Serve-Singles	1	3.07	4.65
		2	2.57	1.60
9	Long Serve-Doubles	1	1.57	1.13
		2	1.86	1.22
		3	2.29	1.38
		4	1.57	.79
12	Drive Serve	2	1.75	1.50
		3	2.75	1.71
		4	3.00	2.16
		5	1.50	1.00
17	Overhead Clear	2	1.20	.45
		3	1.60	.89

*A set of five attempts was recorded as one trial.

TABLE 4
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL III FOR CRITERION OBJECTIVES
 OF THREE OUT OF FIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL III MEAN	STANDARD DEVIATION
3	Short Serve- Doubles	3	1.63	3.13
		4	1.63	1.06
		5	1.50	.76
		6	1.75	1.17
4	Short Serve- Doubles Receiving	3	1.75	1.17
		4	1.38	.74
7	Long Serve-Singles	3	1.25	.50
		4	1.00	0
		5	3.50	4.36
		6	1.67	1.15
9	Long Serve-Doubles	1	2.15	1.41
		2	2.00	1.71
		3	2.42	2.07
		4	2.00	1.60
		5	2.36	1.86
		6	2.64	2.62
12	Drive Serve	2	2.21	1.48
		3	2.07	1.44
		4	2.00	1.22
		5	1.64	1.15
17	Overhead Clear	2	1.18	.40
		3	1.27	.65
		5	1.27	.65

*A set of five attempts was recorded as one trial.

TABLE 5
 OVERALL LEVEL-GROUP MEAN AND STANDARD DEVIATION
 SCORES FOR CRITERION OBJECTIVES OF
 THREE OUT OF FIVE TIMES

BEHAVIOR CATEGORY	LEVEL I		LEVEL II		LEVEL III	
	MEAN	SD	MEAN	SD	MEAN	SD
Serving	1.00	0	2.13	1.68	1.93	1.59
Receiving	1.00	0	1.35	.59	1.56	.95
Overhead Clear	----	----	1.40	.67	1.24	.57
Grand Mean per Level	1.00		1.63		1.58	

*A set of five attempts was recorded as one trial.

a fewer number of mean trials as evidenced by the 1.35 number. Level I required the lowest mean number of trials, 1.00, for competency mastery of receiving objectives.

Discussion. Based upon the results of the computed data, it required both the Level II and the Level III students a fewer mean number of trials to master the receiving than the serving competencies for the criterion of three out of five times. Level I's mean score was the same for both serving and receiving objective mastery.

The mean number of trials required for Level II for the overhead clear objectives was 1.40. Level III required a fewer 1.24 mean number of trials to complete the overhead clear objectives.

In a comparison between groups for the criterion objectives of three out of five times, the data indicated that Level II required the highest mean number of trials to master the serving and overhead clear competencies. Level III required the highest mean number of trials to master the receiving competencies. From the limited data available for Level I, the results indicated that, of the three levels, Level I required the fewest mean number of trials for mastery of their stated serving and receiving competencies.

The level-group mean scores for the three categories of serving, receiving, and overhead clear objectives were combined in order to determine a grand mean score per category for criterion objectives of three out of five times.

This score represented the mean number of trials, for all levels combined. Based upon the results of the computations, the data indicated that the grand mean for the serving objectives was 1.69 trials, which was higher than the grand mean of 1.30 trials needed to complete the receiving objectives.

A grand mean for all levels for the three categories was computed in order to determine the mean number of trials needed to complete all objectives with the criterion of three out of five times. The results of this computation revealed that the grand mean for all levels combined for all categories was 1.40 trials.

Criterion Reference of five times. Data were gathered through self- and peer-recordings of the total number of attempts that were necessary for five successful completions of the stated competencies. Data were grouped, by module and level, for the criterion objectives of five times. Level-group means and standard deviation scores were computed for each objective in each level with five times as the criterion reference. A listing of the objectives, and level-group mean and standard deviation scores for Level I is presented in Table 6 (p. 99). Level II scores are reported in Table 7 (p. 100), and Level III in Table 8 (p. 101).

Based upon the limited data, as shown in Table 6 (p. 99), the mean number of trials needed for Level I to complete five repetitions of the stated criterion was 5.00.

TABLE 6.
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL I FOR CRITERION OBJECTIVES
 OF FIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL I MEAN	STANDARD DEVIATION
3	Short Serve-Doubles	10	----	----
		11	----	----
5	Short Serve-Singles	4	----	----
		5	----	----
6	Short Serve-Singles Receiving	2	----	----
		3	----	----
7	Long Serve-Singles	6	5.00	0
		7	----	----
9	Long Serve-Doubles	3	5.00	0
		4	5.00	0
12	Drive Serve	3	----	----
		4	----	----
18	Overhead Drop	1	----	----
		2	----	----
		3	----	----

*The total number of attempts required to complete five repetitions was recorded as the trial number.

TABLE 7
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL II FOR CRITERION OBJECTIVES
 OF FIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL II MEAN	STANDARD DEVIATION
4	Short Serve-Doubles Receiving	1	5.20	.42
		2	5.50	1.08
5	Short Serve-Singles	4	5.00	0
		5	5.00	0
6	Short Serve-Singles Receiving	2	5.00	0
		3	5.00	0
7	Long Serve-Singles	3	7.00	2.71
		4	7.07	2.67
		5	11.08	5.11
		6	9.92	4.61
		7	9.83	4.43
		8	10.82	4.56
8	Long Serve-Singles Receiving	1	5.93	1.33
		2	5.92	1.80
		3	6.46	1.61
		4	6.43	1.83
		5	5.69	1.03
		6	5.93	1.44
9	Long Serve-Doubles	5	9.00	3.74
		6	7.33	1.63
		7	9.50	3.99
		8	10.17	4.26
10	Long Serve-Doubles Receiving	5	6.57	2.44
		6	6.14	2.19
12	Drive Serve	6	2.75	.50
		7	5.50	5.00
13	Drive Serve-Receiving	3	5.00	1.63
		4	5.00	1.63
18	Overhead Drop	1	6.00	1.73
		2	6.00	1.00
		3	5.80	1.79
19	Smash	1	5.80	.84
		2	5.60	.89
		3	5.80	1.10

*The total number of attempts required to complete five repetitions was recorded as the total trial number.

TABLE 8
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL II FOR CRITERION OBJECTIVES
 OF FIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL III MEANS	STANDARD DEVIATION
3	Short Serve-Doubles	1	8.25	3.24
		2	7.71	1.98
4	Short Serve-Doubles Receiving	1	9.14	4.53
		2	7.29	1.89
		5	6.75	4.10
		6	6.00	2.45
5	Short Serve-Singles	4	5.00	0
		5	5.00	0
6	Short Serve-Singles Receiving	2	5.25	.50
		3	5.00	.50
7	Long Serve-Singles	7	9.80	3.27
		8	10.50	3.32
8	Long Serve-Singles Receiving	1	6.00	2.00
		2	6.50	1.91
		3	5.00	0
		4	5.50	.71
		5	8.00	1.00
		6	9.00	5.29
9	Long Serve-Doubles	7	6.00	1.39
		8	6.45	1.75
10	Long Serve-Doubles	5	5.55	1.69
		6	5.00	.94
14	Flick Serve	1	6.40	2.19
		2	5.00	0
15	Flick Serve-Recieving	1	5.00	0
		2	5.00	0
16	Backhand Serve	1	5.30	.67
		2	5.10	.32
		3	5.78	1.40
		4	5.33	.71
18	Overhead Drop	1	6.13	1.81
		2	6.00	1.89
		3	5.80	1.55
19	Smash	1	6.45	2.91
		2	6.64	3.96
		3	6.45	3.93
		4	5.54	1.51

*The total number of attempts required to complete the repetitions was recorded as the total trial number.

The mean number of trials needed for Level II to complete five successful repetitions of the objective ranged from 5.00 to 11.08. Level III's mean number of trials ranged from 5.00 to 10.50. The highest mean number of trials for both Level II and Level III occurred in the long serve for singles module. Both of the objectives required the server to deliver the service into the correct designated receiving court, then following the service move to the correct ready court position and make a legal return of the receiver's service return. There was also a placement component in the Level II objective, but not in the Level III objective.

The data were then analyzed through a comparison between level-group means for serving objectives, receiving objectives, and overhead forehand shots. Objectives in each level were placed into one of the three component categories, and level-group mean and standard deviation scores were computed for each level for the three categories. Table 9 (p. 103) presents this information.

The composite level-group mean number of trials needed for Level I to complete the serving objectives was 5.00. The mean number of trials needed for mastery of the receiving objectives was also 5.00. There was no data available for Level I for the forehand overhead shots.

The composite level-group mean number of trials for Level II, 7.76, for mastering the serving competencies, was the highest of the three levels. The mean number of trials

TABLE 9
 OVERALL LEVEL-GROUP MEAN SCORES FOR
 CRITERION OBJECTIVES OF
 FIVE TIMES

BEHAVIOR CATEGORY	LEVEL I MEAN	LEVEL II MEAN	LEVEL III MEAN
Serving	5.00	7.76	6.74
Receiving	----	5.55	5.87
Overhead	----	5.83	6.15
Grand Mean per level	5.00	6.38	6.25

*The total number of attempts required to complete five repetitions was recorded as the total trial number.

for mastering the receiving competencies was 5.55. Mastery of the overhead forehand shots, required a mean number of trials of 5.83.

The composite mean number of trials for serving competency for Level III was 6.74, which was a fewer number than what Level II required. The mean number of trials needed for mastering the receiving competencies was 5.87. The mean number of 6.15 trials was required for completion of the overhead forehand shot objectives.

Discussion. Based upon the available data, it appears that in order to master psychomotor competencies containing the consistency criterion of five times, of the three levels, Level II required the highest mean number of trials to master competency in the serving objectives. Level III required the highest mean number of trials for mastering competencies in both the receiving objectives and the forehand overhead shots.

The level-group mean scores for the three categories of serving, receiving, and overhead clear objectives were combined and an overall composite mean or grand mean computed per category for criterion objectives of five times. Based upon the results of the computation, the data indicated that the grand mean for serving was 6.50 trials. This mean number of trials was higher than the 5.71 mean number required to master the receiving competencies. The grand mean for the overhead shots was 5.99 trials. This indicated that

for all levels combined, it required a higher mean number of trials to complete or master the serving competencies than it did to master the receiving or overhead shot objectives.

A grand mean for all levels for the three categories was computed in order to determine the mean number of trials needed to complete all objectives with the criterion of five times. The results of this computation revealed that the grand mean for all levels combined for all categories was 5.88 trials.

Criterion reference of five consecutive times. Data were collected through individual and peer recordings for the total number of trials needed to successfully complete five consecutive repetitions of the objective. A trial was defined as a set of five attempts.

Data were grouped for all three levels by module and objective number, with the criterion of five consecutive repetitions. Composite level-group mean and standard deviation scores were computed for each objective. Level I-group scores are reported in Table 10 (p. 106); Level II-group data is reported in Table 11 (p. 107); and Level III-group data in Table 12 (p. 108).

Data were incomplete for Level I, as no subjects completed the objectives for the modules of doubles short serve and singles short serve. Data available for the doubles long serve indicated that for the stated objectives, 1.00 mean number of trials was required to complete the objectives.

TABLE 10
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL I FOR CRITERION OBJECTIVES
 OF FIVE CONSECUTIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL I MEAN	STANDARD DEVIATION
3	Short Serve-Doubles	6	----	----
		7	----	----
5	Short Serve-Singles	6	----	----
		7	----	----
9	Long Serve-Doubles	5	1.00	0
		6	1.00	0

*A set of five attempts was recorded as one trial.

TABLE 11
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL II FOR CRITERION OBJECTIVES
 OF FIVE CONSECUTIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL II MEAN	STANDARD DEVIATION
3	Short Serve-Doubles	5	1.11	.33
		6	1.00	0
5	Short Serve-Singles	6	1.00	0
		7	1.00	0

*A set of five attempts was recorded as one trial.

TABLE 12
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL III FOR CRITERION OBJECTIVES
 OF FIVE CONSECUTIVE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL III MEAN	STANDARD DEVIATION
3	Short Serve-Doubles	7	1.38	.78
		8	1.13	.35
5	Short Serve-Singles	6	1.25	.50
		7	1.25	.50
7	Long Serve-Singles	1	1.60	.89
		2	2.25	.96

*A set of five attempts was recorded as one trial.

Level II-group mean number of trials ranged from 1.00 to 1.11. The range for Level III-group mean number of trials was 1.13 to 2.25, which was wider than the Level II range.

The level-group mean scores for the serving objectives were combined and an overall or grand mean computed for this category. This analysis revealed that Level III required the highest mean number of trials, 1.48, for mastery of the stated competencies. Level II required 1.13, and Level I, 1.00 trials.

A grand mean for all levels was computed in order to determine the mean number of trials needed to complete all objectives with the criterion of five consecutive times. The results of this computation revealed that the grand mean for all levels combined was 1.17 trials.

Based upon the data available, it appears that all three levels completed the objectives with the criterion of five consecutive times, with a mean number of trials of under two attempts.

Criterion reference of three times. Data were collected containing the criterion of the number of times necessary for repetition of the stated objective three times. The total number of attempts necessary to complete three repetitions was recorded as the trial number.

Data were categorized by level for objectives containing the stated criteria. There were only two objectives

in Level I which contained the stated criterion, and both were in the long serve for singles serving module. For both of these objectives, the level-group mean number of trials required was three.

The grouped data for Level II is presented in Table 13 (p. 111). Of the objectives stated for Level II, four were in the doubles long serve receiving module, and two were in the drive serve receiving module. The mean number of attempts necessary for mastering the stated competencies ranged from 3.75 to 5.14.

The mean number of trials for Level III ranged from 3.89 to 6.40. Level III data is presented in Table 14 (p. 112). Of all the modules for Level III which contained objectives with the criterion of three times, only one, flick serve, contained serving objectives. The other modules containing these objectives were for receiving the long serve in doubles, driven serve, and the flick serve.

Overall composite level-group means were computed for receiving objectives with the stated criterion. Level III's composite mean number of trials, 5.27, was the highest of the three levels. Level II required 4.40 mean number of trials in order to complete the receiving objectives, and Level I required only three trials. Serving objectives were only present in the flick serve module for Level III, so a between group-level composite means comparison was not possible. The mean number of attempts for serving for

TABLE 13
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL II FOR CRITERION OBJECTIVES
 OF THREE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL II MEAN	STANDARD DEVIATION
10	Long Serve-Doubles Receiving	1	4.43	1.13
		2	3.71	.95
		3	5.14	2.19
		4	4.86	1.68
11	Drive Serve-Receiving	1	3.75	.96
		2	4.50	1.29

*The total number of attempts necessary to complete three repetitions was recorded as the total trial number.

TABLE 14
 LEVEL-GROUP MEAN AND STANDARD DEVIATION SCORES
 FOR LEVEL III FOR CRITERION OBJECTIVES
 OF THREE TIMES

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	LEVEL III MEAN	STANDARD DEVIATION
10	Long Serve-Doubles Receiving	1	5.55	3.75
		2	5.80	3.97
		3	3.89	.93
		4	5.00	4.00
13	Drive Serve-Receiving	1	6.00	3.61
		2	5.92	3.06
14	Flick Serve	3	6.40	2.19
		4	5.20	.84
15	Flick Serve-Receiving	3	5.00	0
		4	5.00	0

*The total number of attempts necessary to complete three repetitions was recorded as the total trial number.

Level III was 5.80, which was a higher mean number of trials than was required for any of the three levels for mastery of the stated receiving objectives.

A grand mean for all levels for the criterion objectives of three times was computed in order to determine the mean number of trials required to master these competencies. The results of this analysis revealed that the grand mean for all levels combined for all objectives was 5.01 trials.

Criterion reference of four times. Data were collected and tallied for criterion objectives of four times. The total number of attempts required to successfully complete four repetitions of the objective was recorded as the total trial number.

The grouped data for the stated criterion revealed that only Level III objectives contained the criterion objectives of four repetitions. The level-group mean number of trials for Level III ranged from 5.00 to 5.73 trials.

For comparisons of differences between categories, the data were separated into serving and receiving objectives, and category level-group means were computed for serving and receiving. The results of these computations revealed that the overall level-group serving mean was 5.08 trials and the overall level-group receiving mean was 5.61 trials.

The mean number of trials for all objectives were averaged in order to determine an overall or grand level-group

mean for criterion objectives of four times. The results of this analysis indicated that the grand mean for all objectives containing the criterion of four times was 5.35 trials needed for competency mastery.

Criterion reference of six out of ten times. Data were collected, tabulated and grouped by level for the criterion objectives of six successful completions within ten trials. A trial was defined as ten attempts.

Level-group mean and standard deviation scores were computed for each of the level objectives. The only objective for Levels II and III which contained the criterion of six out of ten attempts was for the overhead defensive clear. The distance the shuttle had to travel was the difficulty component which differed the objective between the levels. The level-group mean score for Level II was 1.50 trials and the standard deviation was .58. The level-group mean score for Level III of 1.18 trials and the standard deviation of .40 was lower than the scores recorded for Level II. No data was available for Level I.

An overall category mean was computed. Both level-group mean scores were combined in order to compute the grand mean. The results of this computation revealed that the grand mean for this category was 1.34 trials needed to complete the criterion objective of six out of ten trials.

Comparison and discussion of the mean number of trials per criterion. Data were summarized for each of the

psychomotor criterions, and is presented in Table 15 (p. 116). Each criterion was separated into three categories of serving objectives, receiving objectives, and overhead shot objectives, and level-group mean scores were computed for each category. All of the level-group mean scores were averaged to determine the grand mean score per level per criterion.

A between level-group mean comparison was made for the three category sections per criterion reference. From the summary of the Level I data, it appears that the mean number of trials required to successfully complete all of the criterion-referenced objectives was the minimum number or trials. This seems to indicate that for the Level I subjects, they only required one trial or the equivalent as defined by each criterion category, to master the stated objective competency. Due to the limited number of subjects completing the Level I objectives, and because of the limited data recorded for Level I, these data were not subjected to a between-groups comparison of the means for the stated criterion.

The level-group mean scores were compared between Levels II and III. In mastering the serving competencies, Level II required a higher mean number of trials than did Level III, for the criterion referenced categories of three out of five times and five times. Level III required a higher mean number of trials for the criteria category of five consecutive times.

TABLE 15
SUMMARY OF LEVEL-GROUP MEAN SCORES PER CRITERION

CRITERION	BEHAVIOR VARIABLE	LEVEL I MEAN	LEVEL II MEAN	LEVEL III MEAN
Three out of five Times	Serving	1.00	2.13	1.93
	Receiving	1.00	1.35	1.56
	Overhead	----	<u>1.40</u>	<u>1.24</u>
GRAND MEAN PER LEVEL		1.00	1.63	1.58
Five Times	Serving	5.00	7.76	6.74
	Receiving	----	5.55	5.87
	Overhead	----	<u>5.83</u>	<u>6.15</u>
GRAND MEAN PER LEVEL		5.00	6.38	6.25
Five Consecutive Times	Serving	1.00	1.03	1.48
	Receiving	----	----	----
	Overhead	----	----	----
GRAND MEAN PER LEVEL		1.00	1.03	1.48
Three Times	Serving	----	----	----
	Receiving	3.00	4.40	5.27
	Overhead	----	----	----
GRAND MEAN PER LEVEL		3.00	4.40	5.27
Four Times	Serving	----	----	5.08
	Receiving	----	----	5.61
	Overhead	----	----	----
GRAND MEAN PER LEVEL		----	----	5.35
Six out of Ten Times	Serving	----	----	----
	Receiving	----	----	----
	Overhead	----	<u>1.50</u>	<u>1.18</u>
GRAND MEAN PER LEVEL		----	1.50	1.18

The mean number of trials necessary to master the receiving competencies were compared between the two levels. For the criteria categories of three out of five times, five times, and three times, Level III required a higher mean number of trials than did Level II.

Three criterions were compared between the two levels of the mean number of trials needed for mastering the objectives for the overhead shots. Level II required a higher mean number of trials to complete the criterion objectives of three out of five and six out of ten times. Level III required a higher mean number of trials to complete the criterion objectives of five times.

In comparing the grand mean per level per criterion between the two groups, the data revealed that Level II required a higher mean number of trials to complete the criterion referenced objectives of three out of five times, five times, and six out of ten times. Level III required a higher mean number of trials to complete the criterion referenced objectives of five consecutive times and three times. No comparisons between levels could be made for the criterion category of four times, as the only level to contain objectives with this criteria was Level III.

A between criterion comparison was made by computing an overall mean score for each criterion. The three level-group mean scores for serving, receiving and overhead shots were combined to form one overall mean score for each of the

three category sections. The category means were then averaged to determine a grand mean score per criterion. The category means and grand mean scores are presented in Table 16 (p. 119).

The results of a comparison between the category means revealed that it required a higher mean number of trials to complete the serving objectives than it did to complete the receiving objectives. The only exception was in the criteria category of four times, which only contained Level III objectives. When comparing the three categories, the data revealed that for the criterion categories which contained objectives for the three component sections (serving, receiving, overhead) a fewer mean number of trials was required to complete the overhead objectives than to complete the serving, but a higher mean number of trials to complete the overhead than the receiving objectives.

When the grand means per criterion were compared, it was discovered that the mean number of trials for all subjects to complete the criterion referenced objectives of three out of five times was 1.40 trials, and the mean number of trials required to master the criteria of five consecutive times was 1.17 trials. This seems to indicate that for the objectives designed for this competency-based instructional system, it required a fewer mean number of trials to master five consecutive repetitions of the skill than it did to complete three repetitions within five attempts.

TABLE 16
SUMMARY OF CATEGORY MEAN SCORES PER CRITERION
AND GRAND MEANS PER CRITERION

CRITERION REFERENCE	BEHAVIOR VARIABLE	CATEGORY MEAN	GRAND MEAN
Three out of Five Times	Serving	1.69	
	Receiving	1.30	
	Overhead	1.32	
GRAND MEAN PER CRITERION			1.40
Five Times	Serving	6.50	
	Receiving	5.71	
	Overhead	5.99	
GRAND MEAN PER CRITERION			5.88
Five Conse- cutive Times	Serving	1.17	
	Receiving	----	
	Overhead	----	
GRAND MEAN PER CRITERION			1.17
Three Times	*Serving	5.80	
	Receiving	4.22	
	Overhead		
GRAND MEAN PER CRITERION			5.01
Four Times**	Serving	5.08	
	Receiving	5.61	
	Overhead	----	
GRAND MEAN PER CRITERION			5.35
Six out of Ten Times	Serving	----	
	Receiving	----	
	Overhead	1.34	
GRAND MEAN PER CRITERION			1.34

*Level III was the only level that had objectives containing this criterion.

**Level III was the only level that had this entire criterion category.

The grand mean criterion scores for the criteria categories in which the subject was to record the total number of attempts required to successfully complete the stated number of repetitions were compared. The results of this comparison yielded that the mean number of attempts required to repeat the skill five times was 5.88, compared to 5.35 attempts needed to complete four repetitions, and the 5.01 mean number of attempts required to complete three repetitions. This seems to indicate that five repetitions required a fewer mean number of attempts than four or three, and three required the highest mean number of attempts.

In comparing the grand means for the two categories of three out of five times and three times, it appeared that the students required slightly over five attempts to complete both categories, with three out of five requiring the highest mean number. These data seem to suggest that a higher mean number of trials was required to complete three repetitions than was required to complete five repetitions.

Based upon the data presented, it appears that the mean number of trials for differing psychomotor criteria can be recorded through self- and peer-recordings of the number of trials needed to master the stated objectives. It also appears that the mean number of trials required for competency mastery for the stated cognitive and psychomotor objectives varies according to the level of the subjects, the degree of difficulty of the criterion, and the complexity of the different criterion references utilized.

Competitive evaluation instrument. Data were collected on individual students during game play in singles and doubles. The tool utilized for the collection of this data was a seven category game play rating scale developed by the researcher. The rating scale had been field tested in a pilot project prior to this study. The overall mean rating scale reliability percentage was 80 percent. The procedure for developing the tool and determining reliability was discussed in Chapter III, p. 56.

Each student was evaluated by the investigator or a student assistant trained to use the evaluation tool, during a class-played competitive situation. Continuous event recording was used to collect the data. All shots and faults were recorded in the form of tally marks in the appropriate space or category. Percentages were then computed for each subject for both singles and doubles game play, for the rating scale categories of serve--effective, ineffective; return of serve--effective, ineffective; shot choice during rally--effective, ineffective; faults--the number of faults committed were recorded and counted as the total number.

The data were then grouped according to level, and were analyzed by comparing the level-group mean percentages and number of faults for both singles and doubles game play. The level-group mean percentages for all levels for singles game play in presented in Table 17 (p. 122) and doubles level-group mean percentages in Table 18 (p. 123). Overall summary data are reported in Table 19 (p. 124).

TABLE 17
 LEVEL-GROUP MEAN PERCENTAGES FOR
 SINGLES GAME PLAY EVALUATION

RATING SCALE CATEGORY	LEVEL I	LEVEL II	LEVEL III
Serve-Effective	27.00	79.50	57.77
Serve-Ineffective	70.00	20.50	34.62
Return of Serve-Effective	67.00	37.50	41.54
Return of Serve-Ineffective	33.00	62.75	50.77
Shot Choice During Rally-Effective	29.00	53.00	61.62
Shot Choice During Rally-Ineffective	71.00	47.00	38.77
Number of Faults	4.00	4.75	4.08

TABLE 18
 LEVEL-GROUP MEAN PERCENTAGES FOR
 DOUBLES GAME PLAY EVALUATION

RATING SCALE CATEGORY	LEVEL I	LEVEL II	LEVEL III
Serve-Effective	50.00	88.75	65.83
Serve-Ineffective	50.00	11.25	34.17
Return of Serve-Effective	0	64.50	44.58
Return of Serve-Ineffective	100.00	35.50	55.42
Shot Choice During Rally-Effective	20.00	47.50	47.33
Shot Choice During Rally-Ineffective	80.00	52.50	52.83
Number of Faults	1.00	1.50	1.75

TABLE 19
LEVEL-GROUP COMPOSITE MEAN PERCENTAGES FOR
SINGLES AND DOUBLES GAME PLAY EVALUATIONS

BEHAVIOR VARIABLE	LEVEL I	LEVEL II	LEVEL III
Grand Mean-Serve Effective	38.50	84.13	61.80
Grand Mean Return of Serve Effective	33.50	51.00	43.06
Grand Mean-Shot Choice During Rally Effective	24.50	50.25	54.47
Grand Mean-Number of Faults	2.50	3.13	2.91

Data tabulated for Level I revealed that the mean percentage serving rates ranged from 27 percent effective to 73 percent effective in singles game play, and from 50 percent effective to 50 percent ineffective in doubles game play. The mean percentages for return of serve for singles was 67 percent effective and 33 percent ineffective. Doubles mean percentages for return of service was 0 percent effective and 100 percent ineffective. The mean percentages for effective shot choice during the rally in singles game play was 29 percent and 20 percent in doubles game play. Seventy-one percent of the shots taken in singles were ineffective and an even higher 80 percent were ineffective in doubles. The mean number of faults committed during singles game play was 4.0 and decreased to a 1.0 during doubles play.

The Level II mean percentages for serving effectiveness in singles game play was 79.50 percent compared to 20.50 percent ineffective. Percentages of serving in doubles game play were 88.75 percent effective and 11.25 percent ineffective. Doubles mean percentages for return of service was 64.5 effective and 35.5 ineffective. The percentage of effective shots during singles play was 53.0 percent and 47.50 during doubles. The mean number of faults committed during singles game play was 4.75, which was higher than the mean number of 1.5 for doubles.

The Level III mean percentage of effective serves delivered during singles game play was 57.77, while 34.62

percent were ineffective. Doubles mean serving percentages were 65.83 effective to 34.17 ineffective. The mean percentage of serves which were returned effectively during singles game play was 41.54, and 50.77 were ineffectively returned. Mean percentages for return of service in doubles play was 44.58 effective and 55.42 ineffective. The mean percentage of effective shots during the rally was 61.62 for singles and 47.33 for doubles. Mean percentages of ineffective shots hit during the rally were 38.77 for singles play, and 52.83 for doubles play. The mean number of faults for singles game play was 4.08, which decreased to 1.75 during doubles game play.

Discussion. Of the three levels, Level II had the highest mean percentages of effective serves during singles game play, 79.50 percent, and for doubles 88.75 percent. The highest mean percentage of effective return of serves for singles was 67.0 percent for Level I, and 64.50 percent for Level II in doubles game play. Level III had the highest mean percentage for effective shots during a singles game, with 61.62 percent. The doubles game play mean percentages of effective shots during the rally were very close, with 47.50 percent for Level II being the highest.

In comparing the mean number of faults for all levels for singles and doubles play, it was noticed that the number for each event was very close. For singles play, Level I mean number was 4.0, Level II was 4.75, and Level III was

4.08. The mean-level fault scores for doubles play was 1.0 for Level I, 1.5 for Level II, and 1.75 for Level III. In comparing the mean number of faults committed for all levels, there was a greater number of faults committed by all levels for singles game play.

In a comparison between groups of overall grand means (combining singles and doubles level-mean percentages), the Level II percentages for effectiveness in serving and returning the serve was the highest of the three groups. The mean serving percentage for Level II was 84.13, compared to a 38.50 for Level I, and 61.80 for Level III. The grand mean percentage for effective return of service for Level II was 51.0, compared to 33.50 for Level I, and 43.06 for Level III. The Level III overall grand mean percentages for effective shots during the rally was 54.47 percent, which was the highest percentage of the three groups. The Level I grand mean percentage was 24.50 and Level II was 50.25.

The overall grand mean for the number of faults committed for all three levels showed that Level II had the highest mean number of 3.13 faults. Level I had the lowest number of 2.5 faults, and Level III's mean number of faults was 2.91.

Based upon the completion of the rating scale, it appears that a game playing rating instrument, for the assessment and evaluation of competitive game play for singles and doubles can be developed and reliably used.

Correlation between isolated skill acquisition and game playing evaluations. In order to determine if the relationship between the level-group mean number of trials required for competency mastery and game playing evaluation percentages for effective serve and return of serve, and selected level-group mean evaluation percentages for singles and doubles game play were significant, the data were analyzed by applying the Pearson Product Moment Correlation Coefficient Technique. The data were grouped for presentation by criterion of serving effectiveness, return of serve effectiveness, and game playing percentages for singles and doubles play. Since only one subject completed the Level I objectives, that data was not subjected to analysis. The data for Levels II and II is presented in Table 20 (pp. 129-131).

The results of the intercorrelation data analysis revealed that the correlation coefficients obtained for Levels II and III between the percentage of serving effectiveness and return of serve effectiveness with selected level-group mean number of trials required for competency mastery was not significant at the .05 level of confidence. The correlation coefficients obtained for Levels II and III between effective game playing percentages for both singles and doubles revealed that a significant relationship did not exist at the .05 level of confidence.

TABLE 20

INTERCORRELATIONS OF SELECTED PSYCHOMOTOR COMPETENCIES
WITH GAME PLAY EVALUATION PERCENTAGES

VARIABLE	LEVEL	OBJECTIVE NUMBER	r	Critical Value at .05 Level
Serve Effective Singles Game with Long Serve for Singles (Module 7)	II	1	.260	.602
		2	.275	.576
		3	.155	.602
		4	.056	.602
		5	.427	.602
		6	.071	.632
		7	.203	.632
		8	.244	.632
Serve Effective Singles Game with Long Serve for Singles (Module 7)	III	1	.236	.878
		2	.229	.950
		3	.203	.950
		4	----	----
		5	.381	.950
		6	.074	.997
		7	.039	.878
		8	.090	.950
Serve Effective Singles Game with Short Serve for Singles (Module 5)	II and III comb.	6	.063	.754
		7	.063	.754
Serve Effective Doubles Game with Short Serve for Doubles (Module 3)	II	1	.461	.707
		2	.208	.707
		3	.294	.707
		4	.472	.707
Serve Effective Doubles Game with Short Serve for Doubles (Module 3)	III	1	.491	.754
		2	.291	.811
		3	.488	.754
		4	.391	.754
		5	.370	.754
		6	.370	.754
		7	.371	.754
		8	.371	.754

Table 20, continued

Variable	Level	Objective No.	r	Critical value at .05 level
Serve Effective	II	1	-----	-----
Doubles Game with		2	.199	.878
Long Serve for		3	.113	.878
Doubles (Module 9)		4	.471	.878
		5	.497	.878
		6	.395	.878
		7	.395	.878
		8	.395	.878
Serve Effective	III	1	.139	.602
Doubles Game with		2	.350	.602
Long Serve for		3	.210	.602
Doubles (Module 9)		4	.242	.602
		5	.405	.632
		6	.473	.666
		7	.065	.666
		8	.239	.632
Return of Serve Sgs. Eff. with Singles Short Serve Rec. (Module 6)	III	2	.309	.950
Return of Serve Sgs. Eff. with Singles Long Serve Rec. (Module 8)	II	1	.070	.576
		2	.184	.576
		3	.075	.576
		4	.100	.576
		5	.216	.576
		6	.283	.576
Return of Serve Sgs. Eff. with Singles Long Serve Rec. (Module 8)	III	1	.352	.950
		2	.148	.950
		3	-----	-----
		4	.001	-----
		5	.405	.997
		6	.156	.950
Return of Serve Dbs. Eff. with Doubles Short Serve Rec. (Module 4)		3	.155	.707
		4	.312	.707
		5	.171	.811
		6	.408	.707

Table 20, continued

Variable	Level	Objective No.	r	Critical value at .05 level
Return of serve Dbs.	III	1	.439	.811
Eff. with Doubles		2	.324	.811
Short Serve. Rec.		3	.323	.754
(Module 4)		4	.442	.754
		5	.403	.754
		6	.436	.754
Return of Serve Dbs.	II	1	.118	.878
Eff. with Doubles		2	.314	.878
Long Serve Rec.		3	.499	.878
(Module 10)		4	.378	.878
		5	.479	.878
		6	.405	.878
Return of Serve Dbs.	III	1	.247	.666
Eff. with Doubles		2	.231	.666
Long Serve Rec.		3	.277	.707
(Module 10)		4	.396	.754
		5	.371	.632

GAME PLAY CATEGORIES INTERCORRELATIONS (PERCENTAGES)

Singles Serve Effective with Singles Return of Serve Effective	II	.228	.950
	III	.346	.553
Singles Serve Effective with Doubles Serve Effective	II	.246	.950
	III	.350	.576
Singles Serve Effective with Doubles Return of Serve Effective	II	.154	.950
	III	.261	.576
Doubles Serve Effective with Doubles Return of Serve Effective	II	.434	.950
	III	.432	.576
Singles Serve Effective with Doubles Serve Effective	II	.154	.950
	III	.261	.576
Singles Return of Serve Effective with Doubles Return of Serve Effective	II	.278	.950
	III	.182	.576
Singles Serve Effective with Doubles Return of Serve Effective	II	.154	.950
	III	.261	.576

The results of this analysis appears to indicate that the number of trials required for mastery of the stated objectives had no significant relationship to the percentage of effective serves and return of serves delivered during game play for both singles and doubles for both Levels II and III. It also appears that there was not a significant relationship between the percentage of effective serves and return of serves for singles and doubles game play for both Levels II and III.

Based upon these results, it may indicate that the number of repetitions necessary for competency mastery, which in turn determines the number of times the skill in isolation is practiced, cannot be related to the percentage of effective serves and return of serves delivered during game play. The results of the intercorrelations further seem to support that the percentage of effective serves and return of serves in singles game play is not significant with the same two categories during doubles game play. The data also seem to reveal that the number of trials required to accomplish the stated tasks, as described in the criterion, and effective game play serves and return of serves seems to be specific to that task, as indicated by the intercorrelations.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study was designed to develop a competency-based instructional system for teaching and coaching badminton. A module design was used for the development and organization of the competency-based format. Twenty-one competency-based modules, designed as either shot execution, cognitive development, game play, or game evaluation modules were developed by the investigator. Three performance levels were provided in most modules, with the Level III objectives being the most difficult to master. All modules consisted of a rationale, time allotment estimate, prerequisites, pre-assessment, level objectives, instructional activities, post-assessment, and remediation activities component categories.

The subjects were twenty-four physical education undergraduate majors or minors enrolled in a beginning badminton class. Data were collected each class period through self- and/or peer-recordings of the number of trials required to master the stated level competencies.

The data were analyzed by (1) trials to criterion assessment and (2) multiple intercorrelations of selected skill objectives with the game playing evaluation modules.

Conclusions

Based upon the completion of the competency-based instructional system and the data analysis, the following conclusions were drawn:

(1) Badminton skills can be defined behaviorally and arranged in sequential order. It is the opinion of this investigator that skill sequences can be developed and that difficulty components of accuracy, consistency, distance, placement, and body court positioning can be selected and arranged within the stated skill sequences. It was also evidenced that badminton skills can be modularized, and varying performance levels defined, provided for, and arranged sequentially in a hierarchy from mechanical execution to combinations of skills grouped as associated learning patterns leading to a more realistic game playing sequence.

(2) A competency-based instructional system is a feasible means for acquiring and mastering competencies. The provision for self-pacing, inherent within the competency-based design, places the accountability for learning and performance on the students, therefore, they tend to become a more self-motivated and self-disciplined learner. Immediacy and visability of results provides not only for immediate reinforcement, but also with continual and ongoing evaluation. The personalization of the instructional sequencing provides for individual learning rates and styles, consequently the emphasis is on exit success and mastery rather than failure.

Twenty-one learners completed their self-chosen level which in turn provided competency to complete the instruction conducted post-assessment.

(3) Students, when choosing their own performance level, tend to work harder to achieve competency mastery. Of the twenty-one students completing all of the modules, only one student selected to fulfill the Level I objectives (final grade of C). Five of the students successfully completed the Level II requirements (for a final grade of B), and 15 of the students completed the Level III requirements (for a final grade of A). It is the opinion of this investigator that when learners are provided with exit requirements and teacher expectations, they appear to take advantage of the continual evaluation process in the form of the instructor conducted post-assessments, and prefer this type of evaluation process rather than a battery of tests taken at the end of the class or unit. It is also believed that when students are given the opportunity to determine in part their own grade, that it becomes more of an internal motivation process to work hard to achieve their own goals.

(4) The average number of trials required for competency mastery was dependent upon the skill level of the performer and the criterion stated in the objective. Of the seven criterion references reported,

(1) for cognitive written examinations objectives,
the level-group mean number of trials for

mastery ranged from a 1.0 for Level I to a 2.0 for Level III.

- (2) the level-group grand mean for the number of trials to master criterion objectives of three out of five times was 1.0 for Level I, 1.63 for Level II, and 1.58 for Level III.
- (3) the level-group grand mean for the number of trials to master criterion objectives of five times was 5.00 for Level I, 6.38 for Level II, and 6.25 for Level III.
- (4) the level-group grand mean for the number of trials to master criterion objectives of five consecutive times was 1.00 for Level I, 1.13 for Level II, and 1.48 for Level III.
- (5) the level-group grand mean for the number of trials to master criterion objectives of three times was 3.00 for Level I, 4.40 for Level II, and 5.38 for Level III.
- (6) the level-group grand mean for the number of trials to master criterion objectives of four times was 5.35 for Level III.
- (7) the level-group grand mean for the number of trials to master criterion objectives of six out of ten times was 1.50 for Level II and 1.19 for Level III.

(5) From a comparison of level-grouped data it was discovered that:

(1) Level II required a higher mean number of trials to complete serving objectives.

(2) Level III required a higher mean number of trials to complete receiving objectives.

(6) Students can self-record and record for a peer the number of attempts required for competency mastery for a variety of criterion references. The students at times appeared to be very apprehensive that the number of trials necessary for mastery was not going to be an influencing factor on their final grade for the course. The instructor frequently reminded them that the self- or peer-recordings of the number of trials should be an accurate account of all attempts needed for competency-mastery of each objective. They were also told collectively and individually that the number of trials was not a determining factor in their final grade. Due to the traditional program and evaluation procedures background of the students, it was evident to the investigator that the students were apprehensive in recording the actual number of trials. The possibility existed, due to the uniqueness of the evaluation process and not totally believing that the number of trials not lower their final grade, that the students practiced the skill until they could perform the stated objectives, then recorded the number of trials. This is not

meant to imply that this type of recording should not be done, it is however the recommendation of this investigator that more self- and peer-recordings should be done in classes so that the students are familiar with the process and are not threatened by the evidence.

(7) A competition rating scale, for evaluating players during singles and doubles game play can serve as a measure for determining playing effectiveness.

(8) There was not a significant correlation between isolated skill acquisition and game playing evaluation.

(9) A competency-based instructional system is a viable means for students to develop psychomotor and cognitive skills.

Recommendations for Further Study

Based upon the results of this study, the investigator proposes four recommendations for further research:

(1) adaptation of this instructional system to other subject matter areas.

(2) adaptation of this instructional system to other age groups.

(3) redesigning the competencies so that a wider range of difficulty existed within and between the levels.

(4) redesigning the modules or objectives within the modules so that a larger percentage of time spent would be devoted to the use of the skills or competencies mastered during some type of game play.

In order to assess the effectiveness of this type of an instructional system within the total scope of physical education programs and what effect it would have on psychomotor and cognitive development, it would first be necessary to implement this system using other subject matter content. Through the use of self- and peer-recordings of the number of trials necessary to master stated competencies, information could be gathered and analyzed as to the mean number of trials required to master skill and knowledge competencies. This information could then serve as a diagnostic tool for the teacher to utilize when organizing content. It would also indicate to the student the average number of trials that are required to master each objective, and that a remediation program should be followed if they are unable to perform the skill in the stated mean number of attempts. Hopefully, this would assist the learner in overcoming deficiencies and/or weaknesses so that failure at the end of the course would not occur.

This type of system should also be implemented and studied at the elementary, junior and senior high school levels. The information obtained from the computations of the number of trials required for mastery could be used in the formulation of terminal requirements for varying age groups. The data would also provide information for a between age group comparison of mean number of trials per criterion per age group.

Future research should center on sequencing the competencies to provide a wider difference in difficulty components between the levels. A second option to be studied would be to require all students that have chosen Level II or III to master all successive levels rather than only their self-chosen level. This would produce information relative to learner rate of progression and would allow for overpracticing the skill.

More modules and/or objectives should be designed for actual game play. Due to the low percentage of effective serves, returns of serve and shots during the rally, it is also believed that the Level I objectives should be redesigned to include objectives closer to the actual game. A possible explanation to the low percentages for Level I was that the step size of the interval between isolated practice and the actual game may have been too wide, therefore associated learning did not occur.

It is the opinion of this researcher that a competency-based instructional system is a feasible means of organizing and presenting subject matter to learners. It is also felt that further research should be done to ascertain the strengths, weaknesses, and effects of this type of design on learning and performance.

REFERENCE LIST

- AACTE-ETS survey. *Today's Education*. September-October 1974, 63 (3), 104-05.
- Alschuler, A. S. & Ivey, A. The human side of competency-based education. *Educational Technology*, 1972, 12 (11), 53-55.
- Anderson, B. J. The effect of videotape replay on the movement self-concept of college women badminton players. *Completed Research in Health, Physical Education, and Recreation*, 1972, 14, 188.
- Anderson, D. W. et al. Competency based teacher education. A paper presented at the American Alliance for Health, Physical Education and Recreation Convention, Milwaukee, April 1976.
- Annarino, A. Mastery learning in physical education. A paper presented at the American Alliance for Health, Physical Education and Recreation Convention, Milwaukee, April 1976.
- Ashcom, B. M. A taxonomy of generic teaching competencies for competency based teacher education programs in Pennsylvania and the methodology for its development (Doctoral dissertation, University of Pennsylvania, 1974). *Dissertation Abstracts International*, 1975, 35, 5182-A. (University Microfilm No. 75-3695)
- Aubertine, H. E. Secondary curriculum design and competency-based education. *Educational Technology*, 1972, 12 (11), 33-39.
- Austin, G. H. A competency-based instructional approach for teachers in secondary schools in low-income urban areas (Doctoral dissertation, University of Massachusetts, 1975). *Dissertation Abstracts International*, 1975, 36, 677A. (University Microfilm No. 75-16, 536)
- Auxter, D. M. Competency-based teacher training in conducting the individualized educational programs for the trainable mentally retarded. *Abstract of Research Papers, 1977 AAHPER Convention*, Seattle, March, 1977.
- Badminton. Chicago: The Athletic Institute, 1969.

- Baker, A. The development of an instrument to project badminton shuttlecocks. Unpublished masters thesis, Western Illinois University, 1971.
- Banathy, B. Instructional systems. Palo Alto: Fearon Publishers, 1968.
- Barker, B. L. Behavior change in intercollegiate badminton players resulting from videotape intervention. Unpublished masters thesis, Western Illinois University, 1977.
- Bechtol, W. M. The ComPac: an instructional package for competency-based teacher education. Educational Technology, 1972, 12 (9), 37-41.
- Bell, V. Augmented knowledge of results and its effects upon acquisition and retention of a gross motor skill. Research Quarterly, 1968, 39 (1), 25-30.
- Besner, P. R. Badminton skill tests for the smash and overhead drop shot. Completed Research in Health, Physical Education and Recreation, 1974, 16, 108.
- Bloss, M. V. & Brown, V. A. Badminton. Dubuque, Iowa: Wm. C. Brown Company, 1975.
- Boehm, J. The effects of a competency-based intervention on student teacher and pupil behavior. Unpublished doctoral dissertation, The Ohio State University, 1974.
- Bradley, W. F. A comparison of three instructional methods on the improvement of selected badminton skills (Doctoral dissertation, Middle Tennessee State University, 1975). Dissertation Abstracts International, 1975, 36, 3484-A. (University Microfilms No. 75-29,100)
- Broer, M. et al. Individual sports for women. Philadelphia: W. B. Saunders Company, 1971.
- Bonalewicz, R. M. Effects of various lengths of practice periods on the learning of new motor skills. Completed Research in Health, Physical Education and Recreation, 1973, 15, 46.
- Bullock, L. M., Dykes, M. K., and Kelly, T. J. Competency based teacher preparation in behavioral disorders. Exceptional Children, 1974, 41 (1), 192-94.

- Bullock, R. V. An approach to competency based program development. Educational Technology, 1975, 15 (2), 38-41.
- Burdeshaw, D., Spragens, J. E., and Weis, P. A. Evaluation of genreal versus specific instruction of badminton skills to women of low motor ability. Research Quarterly, 1970, 41 (1), 472-77.
- Burdin, J. L. & Mathieson, M. B. A review of research on performance-based teacher education. Educational Technology, 1972, 12 (11), 61-66.
- Burnett, R. W. & Schnell, T. R. CBTE and secondary reading: a philosophy and rationale. Journal of Reading, 1975, 18 (7), 544-549.
- Burns, R. W. An instructional module design. Educational Technology, 1972, 12(9), 27-29.
- Burns, R. W. & Klingstedt (Ed). Competency-based Education, an Introduction. Englewood Cliffs: Educational Technology Publications, 1973.
- Burris, B. J. & Olson, A. L. Badminton. Boston: Allyn & Bacon, Inc., 1974.
- Carpenter, P. Developing a methodology for designing systems of instruction. Educational Technology, 1972, 12 (7), 25-29.
- Chui, E. F. Functions and competencies of the entry teacher of secondary physical education. Educational Perspectives, 1973, 12 (3), 3-7.
- Church, W. C. A catalog of a core of competencies for teachers of physical education based on a theoretical model of pupil outcomes (Doctoral dissertation, the Florida State University, 1974). Dissertation Abstracts International, 1975, 35, 5088-A-5089-A. (University Microfilm No. 75-4758)
- Clegg, Ambrose A. and Anna Ochoa. Evaluation of a Performance Based Program in Teacher Education: Recommendation for Implementation. (Seattle: University of Washington, College of Education, August, 1970).
- Cohan, S. The development and field test of a module designed to instruct student teachers in aspects of critical thinking and the teacher behaviors which promote critical thinking. Unpublished dissertation, Columbia University, 1973.

- Coleman, D. A. Development of a performance-based teacher teacher education program for physical education. Quest, 1972, 18, 20-25.
- Competency tests and graduation requirements. Reston, Virginia: The National Association of Secondary School Principals, 1976.
- Cotton, D. J. & Nixon, J. A comparison of two methods of teaching the tennis serve. Research Quarterly, 1968, 39 (4), 929-31.
- Crain, E. W. An evaluation of a competency based teacher education program. Unpublished doctoral dissertation, West Virginia University, 1972.
- Criuckshank, D. R. Brief Notes on competency-based education and competency-based Teacher education: the way its sposed to be. Columbus: The Ohio State University, Education Department, 1973.
- Darst, P. W. The effects of a competency-based intervention on student teacher and pupil behavior. Unpublished doctoral dissertation, The Ohio State University, 1974.
- Davidson, K. R. & Gustavson, L. R. Winning Badminton. New York: The Ronald Press Company, 1964.
- Davis, I. K. Competency based learning. New York: McGraw-Hill Book Co., 1971.
- Davis, M. Effects of having one remedial student tutor another remedial student. In G. Semb (Ed.), Behavior Analysis and Education--1972. Lawrence, Kansas: University of Kansas Support and Development Center for Follow Through, Department of Human Development, 1972.
- DeWitt, R. T. & Dugan, K. Teaching individual and team sports. Englewood Cliffs: Prentice-Hall, Inc., 1972.
- Dodds, P. S. A behavioral, competency-based peer assessment model for student teacher supervision in elementary physical education. Unpublished doctoral dissertation, The Ohio State University, 1975.
- Educational Technology. November 1972, 12 (11), whole issue.
- Edwards, C. H. Changing teacher behavior through self instruction and supervised micro-teaching in a competency-based program. The Journal of Educational Research, 1975, 68 (6), 219-222.

- Elam, S. Performance-based teacher education: what is the state of the art? Quest, 1972, 18, 14-19.
- Elam, S. Performance based teacher education: what is the state of the art? Washington, D.C.: American Association of Colleges for Teacher Education, 1971.
- Engelage, R., Scheer, J., and Tuning, W. Performance-based student teaching programs. Journal of Health, Physical Education and Recreation, 1976, 47 (5), 13-15.
- Farrell, J. E. Programmed vs. teacher-directed instruction in beginning tennis for women. Research Quarterly, 1970, 41 (1), 51-58.
- Farrow, A. C. Skill and knowledge proficiencies for selected activities in the required program at Memphis State University. Completed Research in Health, Physical Education and Recreation, 1972, 14, 163.
- Field, D. A. Relationship of skill to student rated badminton teaching. Abstract of Research Papers 1975 AAHPER Convention, Atlantic City, March, 1975.
- Flannagan, B. A. C. A competency-based assessment of secondary teachers' attitudes and perceptions of qualifications in content area reading instruction (Doctoral dissertation, University of Oregon, 1975). Dissertation Abstracts International, 1976, 36, 6015-A. (University Microfilms No. 76-5164)
- Fox, M. G. & Yound, V. P. Effects of reminiscence on learning skills. Research Quarterly, 1962, 33 (3), 386-94.
- Freeman, W. H. Competency based teacher education: the other side. Journal of Health, Physical Education and Recreation, 1977, 48 (1), 25-29.
- Freischlag, J. Competency based instruction. Journal of Health, Physical Education and Recreation, 1974, 45 (1), 29-31.
- Givens, J. L. Status of teacher education institutions in Texas related to new standards for CBTE and Certification in Fall 1972, Unpublished doctoral dissertation, University of Houston, 1973.
- Gober, B. E. The physical education component of a competency based elementary education program. Unpublished doctoral dissertation, University of Georgia, 1971.

- Grace, R. E. Competency-based professional education in physical education (Doctoral dissertation, University of New York at Buffalo, 1974). Dissertation Abstracts International, 1974, 35 3562-A. (Univeristy Microfilms No. 74-27, 161)
- Gray, C. A. & Brumbach, W. B. Effect of daylight profection of film loops on learning badminton. Research Quarterly, 1967, 38 (4), 562-69.
- Grebner, F. D. Effectiveness of two methods of attaining a full draw by beginning archers. Research Quarterly, 1969, 40 (1), 50-54.
- Hale, P. Individual sports: a textbook for teachers. Dubuque, Iowa: Wm. C. Brown Company, 1974.
- Hamilton, K. The effects of a competency-based intervention on student teacher and pupil behavior. Unpublished doctoral dissertation, The Ohio State Univeristy, 1974.
- Heath, R. W. & Nielson, M. A. The reserach basis for performance-based teacher education. Review of Educational Research, Fall 1974, 44 (4), 463-79.
- Hensley, E. D. Competency-based certification of the secondary school counselor: a conceptual model (Doctoral dissertation, The George Washington University, 1975). Dissertation Abstracts International, 1975, 36, 2024-A. (University Microfilms No. 75-23, 407)
- Hoffman, S. J. Traditional methodology: prospects for change. Quest, 1971, 15, 51-57.
- Holt, A., Thorpe, J. A., and Holt, L. Two methods of teaching beginning swimming. Research Quarterly, 1970, 41 (3) 371-77.
- Hough, J. & Duncan, J. Teaching: description and analysis. Reading, Mass.: Addison-Wesley Publishing Co., 1970.
- Houston, W. & Howsam, R. Competency-based teacher education: progress, problems, and prospects. Chicago: Science Research Associates, Inc., 1972.
- Houston, W. R. Designing competency-based instructional systems. The Journal of Teacher Education, Fall 1973, 24 (3), 200-204.
- Houston, W. R., et al. Developing instructional modules. Houston: College of Education, University of Houston, 1972.

- Huddleston, K. F. A competency pattern approach to development of curricular models for secondary school agricultural occupations programs. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign, 1972.
- Hulac, G. M. et al. Developing competency waivers. Journal of Health, Physical Education and Recreation, 1975, 46 (6), 20-21.
- Hurst, J. Competency-based learning modules in elementary teacher training: a comparison of individualized and group instruction for probing-inquiry teaching. Unpublished doctoral dissertation, Florida State University, 1973.
- Hurst, J. B. Competency based modules and inquiry teaching. The Journal of Experimental Education, Winter, 1974, 43 (2), 35-39.
- Jarrett, H. H. Competency-based education in the liberal arts (Doctoral dissertation, University of Georgia, 1974). Dissertation Abstracts International, 1975, 35, 5055-A. (University Microfilms No. 75-2601)
- Johnson, M. L. A stroke practice machine for badminton, tennis and volleyball. Journal of Health, Physical Education and Recreation, 1973, 44 (9), 70-71.
- Johnson, M. L. Badminton. Philadelphia: W. B. Saunders Co., 1974.
- Johnson, D. J. & Leider, F. E. Comparison of students attitude on performance based and traditional teaching methods. Department of Health, Education, and Welfare, National Institute of Education, 1975. (ERIC Document Reproduction Service No. ED 096 309).
- Jones, H. L. & Hall, G. E. Competency-based education: a process for the improvement of education. Englewood Cliffs: Prentice-Hall, Inc., 1976.
- Journal of Teacher Education. Fall 1973, 24 (3), whole issue.
- Kaminsky, J. S. C/BBTE: an investigation in the philosophy of social science and competency/performance based teacher education. Educational Theory, Summer 1975, 25 (3), 303-313.
- Kay, P. M. & Rosner, B. Are teachers really prepared to handle competency based teacher education? Journal of Research and Development in Education, Fall 1973, 7 (1), 47-53.

- Klingstedt, J. L. Learning modules for competency-based education. Educational Technology, 1972, 12 (11), 29-31.
- Kraft, G. Behavioral objectives for a unit of instruction in badminton. Unpublished report, Hope College, Holland, Michigan.
- Lawson, T. E. A performance-based instructional theory. Journal of Industrial Teacher Education, Spring 1974, 11, 52-64.
- Lessinger, L. M. Implications of competency-based education for urban children. Educational Technology, 1972, 12 (11), 58-60.
- Levine, M. The relationship between knowledge, practice, and pupil achievement in the use of criterion-referenced instructional model. Journal of Experimental Education, Winter 1972, 41 (2), 47.
- Locke, L. F. & Jensen, M. Prepackaged sports skills instruction: a review of selected research. Journal of Health, Physical Education and Recreation, September, 1971, 57-59.
- Mariani, R. A comparison of the effectiveness of the command method and the task method of teaching the forehand and backhand tennis strokes. Research Quarterly, 1970, 41 (2), 171-74.
- Maxim, G. W. The role of research in competency-based teacher education. Education, Fall 1974, 95 (1), 94-96.
- McDonald, F. Behavior modification in teacher education. Seventy-second yearbook of the National Society for the study of education: behavior modification in education. Chicago: University of Chicago Press, 1972.
- McDonald, F. J. Behavior modification in teacher education. Behavior Modification in Education, ed. by Carl E. Thoresen (Chicago: The University of Chicago Press, 1973), 41-76.
- McKinney, J. J. A study of competency-based method of teaching advance typewriting at Georgia Southwestern College (Doctoral dissertation, Auburn University, 1975). Dissertation Abstracts International, 1976, 36, 4974-A. (University Microfilm No. 75-13, 065)

- Malizola, F. T. The teaching of badminton skills to the adolescent: traditional vs. programmed (Doctoral dissertation, The University of North Carolina at Greensboro, 1974). Dissertation Abstracts International, 1975, 12, 7709-A-7710-A. (University Microfilm No. 75-13, 065)
- Melville, D. S. A comparison of the acquisition of badminton skills of college students between the individually prescribed instructional system and a traditional method. Competed Research in Health, Physical Education and Recreation, 1972, 14, 207.
- Miles, G. An evaluation of the elementary physical education competency-based component in the Georgia educational model. Unpublished doctoral dissertation, Florida State University, 1973.
- Miller H. G. & Greer, C. E. Adult education performance-based programs. Clearing House, 1973, 48 (2), 121-123.
- Miskovic, L. The effect of the significant other and high and low skill level on the performance of the overhead clear in badminton. Unpublished masters thesis, Western Illinois University, 1976.
- Mosston, M. Teaching physical education: from command to discovery. Columbus, Ohio: Charles E. Merrill Publishing Company, 1966.
- Nagel, T. S. & Richman, P. T. Competency-based instruction. Columbus, Ohio: Charles E. Merrill Publishing Company, 1972.
- Nelson, J. E. The development of an evaluation instrument for assessing teaching competencies of physical education graduates of the University of Minnesota (Doctoral dissertation, University of Minnesota, 1975). Dissertation Abstracts International, 1976, 36, 5127-A. (University Microfilms No. 76-4066)
- Netcher, J. R. A learning system: what it is, why is it, and how does it work? Journal of Health, Physical Education and Recreation, 1976, 47 (6), 29-30.
- _____. A management model for competency-based HPER programs. The C. V. Mosby Company, St. Louis, 1977.
- Parker, B. An overhead badminton smash test with the Johnson set-up machine. Unpublished study, Northeast Louisiana University, 1973.

- Pease, D. A. Competency-based teacher education. Journal of Health, Physical Education and Recreation, 1975, 46 (5), 20-22.
- _____ & Tabor, T. R. Teaching teachers for skill acquisition: a competency-based teacher education model. Competency-based teacher education--briefings. The National Association for Physical Education of College Women and The National College Physical Education Association for Men, 1975, 41-52.
- Pelton, B. C. Badminton. Englewood Cliffs: Prentice-Hall, Inc., 1971.
- Physical education competencies. Harrisburg, Pennsylvania: Pennsylvania State Department of Education, Bureau of Curriculum Services, 1976. (ERIC Document Reproduction Service No. ED 121 765).
- Poole, J. Badminton. Pacific Palisades: Goodyear Publishing Co. Inc., 1969.
- Publication Manual of the American Psychological Association. Baltimore: Garamond/Pridemark Press, Inc., 1974.
- Reidinger, M. R. Individualized instruction in badminton for the upper elementary level. Unpublished masters thesis, Western Illinois University, 1973.
- Rice F. Competency-based education and the open classroom. Educational Technology, 1972, 12 (11), 56-58.
- Robinson, D. C. Assessment of competency-based freshman biology course (Doctoral dissertation, University of Georgia, 1975). Dissertation Abstracts International, 1976, 36, 5971-A. (University Microfilm No. 76-6447)
- Rogers, W. Advanced Badminton. Dubuque, Iowa: Wm. C. Brown Company Publishers, 1970.
- Rosner, B. The power of competency-based teacher education: a report. Boston: Allyn & Bacon, Inc., 1972.
- Russell, J. D. Modular Instruction. Minneapolis: Burgess Publishing Co., 1974.
- Sayona, D. et al. The Dale Avenue performance objective model. A performance objective curriculum for prekindergarten through third grade. Washington, D. C.: New Jersey State Department of Education, 1974. (ERIC Document Reproduction Service No. ED 110 540)

- Schwarzenbach, L. E. The application of the systems concept to the development of instructional materials in physical education (Doctoral dissertation, University of Wyoming, 1975). Dissertation Abstracts International, 1976, 36, 4330 A-4331-A. (University Microfilm No. 76-1205)
- Scott, G. Y. An examination of competency-based teacher education programs in selected state colleges and universities with implications for Southern University at Baton Rouge, Louisiana (Doctoral dissertation, Kansas State University, 1975). Dissertation Abstracts International, 1975, 36, 2754-A-2755-A. (University Microfilm No. 75-25, 059)
- Seidel, B. L., et al. Sports Skills: a conceptual approach to meaningful movement. Dubuque, Iowa: Wm. C. Brown Company, 1975.
- Sickmiller, E. R. Specified entry behaviors and the CBTE Model. Educational Technology, 1975, 15 (2), 31-35.
- Siedentop, D. How to use PSI in college teaching. A speech presented to the National College Physical Education Association for Men, Kansas City, December, 1973.
- _____, & Rife, F. Developing a learning environment for badminton. The Ohio High School Athlete, January 1974, 33, 17-19.
- Singer, R. N. (Ed.) Physical Education Foundations. New York: Holt, Rinehart, and Winston, 1976.
- _____, & Dick, W. Teaching physical education: a systems approach. Boston: Houghton Mifflin Company, 1974.
- Sipkens, J. F. and Turkovich, T. F. Competency-based teacher education and its characteristics. Unpublished doctoral dissertation, Montana State University, 1973.
- Spriggs, H. K. Developing instructional modules for planning and implementation of plans in a competency-based teacher education program: a doctoral project (Doctoral dissertation, University of Maryland, 1974). Dissertation Abstracts International, 1975, 35, 5996-A. (University Microfilm No. 75-7365)
- Steelman, S. E. A multi-dimensional comparison of modified traditional and competency based physical education instruction using a selected activity (Doctoral dissertation, University of Houston, 1974). Dissertation Abstracts International, 1975, 35, 4236-A-4237-A. (University Microfilm No. 75-1024)

- Stephens, M. W. An evaluation of video-tape replay in the acquisition of perceptual motor skills in beginning badminton classes. Completed Research in Health, Physical Education and Recreation, 1973, 15, 139.
- Tennis-Badminton Guide, Juen 1966-June 1968. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1966.
- Tennis-Gadminton Guide, June 1968-June 1970. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1968.
- Tennis-Badminton Guide, June 1970-June 1972. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1970.
- Tennis-Badminton Guide, June 1972-June 1974. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1972.
- Tennis-Badminton Guide, June 1974-June 1976. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1974.
- Tennis-Badminton Guide, June 1976-June 1978. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1976.
- Thorpe, J. A. Intelligence and skill in relation to success in singles competition in badminton and tennis. Research Quarterly, 1967, 38 (1), 119-125.
- Thorpe, J., West, C., and Davies, D. Learning under a traditional and an experimental schedule involving master classes. Research Quarterly, 1971, 42 (1), 83-90.
- Trap, J. J. Manuscript proficiency as an indication of readiness for cursive handwriting and learner verification of evaluative overlays for transition cursive letter strokes. Unpublished doctoral dissertation, The Ohio State University, 1977.
- Travers, R. M. W. (Ed.) Second Handbook of Research on Teaching. Chicago: Rand McNally and Company, 1973.
- Utz, R. T. & Leonard, L. D. A competency based curriculum. Dubuque, Iowa: Kendall-Hunt Publishing Comapny, 1971.

- Waters, G. R. A model for a competency-based social studies methods course for prospective elementary school teachers (Doctoral dissertation, University of Maryland, 1974). Dissertation Abstracts International, 1975, 35, 6564-A-6565-A. (University Microfilm No. 75-7375)
- Wikoff, O. D. Proposed guidelines for competency-based secondary physical education curriculum revision at Georgia Southwestern College (Doctoral dissertation, Florida State University, 1976). Dissertation Abstracts International, 1977, 37, 4216-A-4217-A. (University Microfilm No. 76-29, 496)
- Young, J. I. & Mondrans, A. P. Psychological implications of competency based education. Educational Technology, 1972, 12 (11), 15-18.
- Ziebarth, R. A. & James, V. C. Secondary education individualized instruction project: a curriculum/instruction project. (SEIIP Project No. 3) Omaha: University of Nebraska, August, 1971. (056 992)

APPENDICES

APPENDIX A
GAME PLAY RATING SCALE AND
CATEGORY DEFINITIONS

RATING CHART

PLAYER'S NAME _____ RATER'S NAME _____

OPPONENT'S NAME(S) _____ DATE _____

GAME SCORE _____ TIME OF GAME _____

WHERE PLAYED _____

SERVES	EFFECTIVE	INEFFECTIVE
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RETURN OF SERVES	EFFECTIVE	INEFFECTIVE
------------------	-----------	-------------

SHOT CHOICE DURING GAME	EFFECTIVE	INEFFECTIVE
----------------------------	-----------	-------------

FAULT

IN A DOUBLES MATCH WHAT IS THE DECLARED STRATEGY COURT
COVERAGE? _____

RATING DURING A DOUBLES GAME OF STRATEGY (5-POINT SCALE) _____

COMMENTS:

CATEGORY DEFINITIONS

SERVE: A serve is the underhand stroke used for scoring points. The serve can be long, short, driven, flicked, or executed from a backhand stroke. The two categories for recording each serve were effective or ineffective. The following guidelines were used to determine each serve;

EFFECTIVE:

1. A long high and deep to the opponents' back court. The serve should force the opponent to be on or behind the baseline for the actual return.
2. A short serve goes no higher than 16 inches when it passes over the net and lands no farther than 20 inches behind the short service line.
3. A player chooses the most appropriate and advantageous serve, based upon the opponents' court position, and both players' strengths and weaknesses.
4. The server is able to place the receiver at a disadvantage due to good serve placement.
5. A driven serve catches the opponent off guard and is not high enough for the opponent to smash.

INEFFECTIVE:

1. The long serve does not force the opponent back past mid-court.
2. The long serve is not high enough to pass over the head of the opponent when he/she is standing in midcourt.
3. A short serve crosses the net so high that the opponent is able to smash or effectively hit the shuttle down.
4. A short serve lands more than 20 inches behind the service line, or higher than 16 inches above the net top, thereby enabling the opponent to gain the advantage by the return.

5. The server continually serves to the same place or to the strength of the receiver, thereby losing the advantage of the serve.
6. The shuttle is an illegal serve, or is hit into the net or out-of-bounds.

RETURN OF SERVE: The return of serve refers to the receiver's execution of the shot chosen to return the serve. Execution and placement are the two component parts to be considered when deciding whether the return shot was effective or ineffective. Effective or ineffective are defined as:

EFFECTIVE:

1. The receiver takes advantage of an ineffective serve which results in placing the server in a defensive position.
2. The receiver's shot is unable to be returned by the server.
3. The receiver's shot forces the server out of the center court ready position.
4. The return is effective based upon the court position of the server.

INEFFECTIVE:

1. The receiver's shot is hit to center court, thereby allowing the server to assume the offensive role.
2. The receiver's shot is a weak return, such as a clear which goes to the opponent's midcourt.
3. The choice of return is inappropriate based upon the court position of the receiver.
4. The net shot or drop clears the top of the net too high allowing the server to hit the shuttle down.
5. The receiver commits a fault, or hits the shuttle into the net or out-of-bounds.

SHOT CHOICE DURING RALLY: This category referred to the recording of shots as they occurred during the rallies. The recorder was asked to record each shot when it occurred as either effective or ineffective based upon the following guidelines;

EFFECTIVE:

1. The player executes an appropriate shot based upon their and/or their opponent's court position.
2. The shot moved the players from the ready court position.
3. Drop shots and net shots were not able to be hit down.
4. Clears moved the opponents from the center court position and landed deep in the court. Both attacking and defensive clears were charted, with the defensive clear being more appropriate for singles play and the attacking clear being more appropriate for doubles play.
5. The smash was hit at the appropriate time, and had a downward angle when it landed in the opponent's court.

INEFFECTIVE:

1. Shots were hit to midcourt, thereby allowing the opponent to gain the offensive or to execute a put-away shot.
2. Drop shots and net shots were hit so that they crossed the net top high enough to be hit downward.
3. Clears were shallow into the opponent's playing court, thereby allowing the shuttle to be smashed.
4. The player continually hit the shuttle to the opponent's midcourt instead of moving the opponent around the court or changing the type of shot executed.

FAULT: A fault referred to an error in stroke execution as well as a violation of the rules. The following were examples of faults:

1. A player during play touches the net with his/her racket or body.

2. A player hits a shot classified as a carry, throw, or sling.
3. A player reaches over the net to hit the shuttle.
4. A player hits the bird twice, or more than once, in succession before returning it to the opponent.
5. A player is hit during play by the shuttle.
6. During the course of the rally a player swings at and misses the shuttle.
7. During the rally a player hits the shuttle into the net or out-of-bounds.

*NOTE: All faults that occurred during the service and the return of service were recorded under either ineffective serve or ineffective return of serve.

MAJOR BADMINTON 122
TEACHING SCHEDULE

D. Phillips

MONDAY	WEDNESDAY
	Sept. 3 Introduction
Sept. 8 Equipment, Shuttle Flight Ready Position, Footwork	Sept. 10 Footwork, Grips, Lead-up Game (singles)
Sept. 15 Short serve, Singles long serve, Drive serve, Flick serve	Sept. 17 Doubles long serve, Defensive clear, Attacking clear, Underhand clear
Sept. 22 Rules for play, Forehand drive, Backhand drive	Sept. 24 Overhead forehand drop, Overhead forehand smash
Sept. 29 Hairpin net shot, Flick clear	Oct. 1 Backhand, clear, Backhand drop, Backhand smash, Backhand serve
Oct. 6 Up-and-back, Side-by-side	Oct. 8 Rotation court coverage
Oct. 13 Round-the-head clear, Round- the-head drop, Round-the- head smash	Oct. 15 Slice and cut shots
Oct. 20 Half smash	Oct. 22 Check-offs and ratings
Oct. 27 Check-offs, singles ratings	Oct. 29 Check-offs, doubles ratings
Nov. 3 Check-offs, ratings	Nov. 5 Check-offs, ratings
Nov. 10 Check-offs, ratings	Nov. 12 Check-offs, ratings

RULES TEST: will be given in class every Monday after
September 22

STRATEGY TEST: will be given every Wednesday after October 8

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6		NO. SUB.	LEVEL MEANS			STAND. DEVIAT.		
				of 5	5	3	of 10	4		LEVEL I	LEVEL II	LEVEL III			
1	Intro,Hist. equip.,grip	<u>Level I</u>													
		1	X						1	2.0000			0		
		2	X												
		3	X						1	1.0000			0		
		<u>Level II</u>													
		1	X						5		1.4000		.8944		
		2	X												
		3	X						5		1.8571		1.0954		
		<u>Level III</u>													
		1	X						13			2.0769	.6405		
		2	X												
		3	X						14			1.8571	.6630		
		2	Footwork & court positioning	<u>Level I</u>											
				1							0				
2									0						
3									0						
4									0						
5									0						
6									0						
7									0						
8									0						
9									0						
		10						0							

APPENDIX D

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6		NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				of 5	5	3	of 10	4			LEVEL II	LEVEL III		
		<u>Level II</u>												
		1							6		1.0000		0	
		2							6		1.0000		0	
		3							6		1.0000		0	
		4							6		1.0000		0	
		5							6		1.0000		0	
		6							6		1.0000		0	
		7							6		1.0000		0	
		8							6		1.0000		0	
		9							6		1.0000		0	
		<u>Level III</u>												
		1							15			1.0000	0	
		2							15			1.0000	0	
		3							15			1.0000	0	
		4							15			1.0000	0	
		5							15			1.0000	0	
		6							15			1.0000	0	
		7							15			1.0000	0	
		8							15			1.0000	0	
		9							15			1.0000	0	
		10							15			1.0000	0	

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6		NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				of 5	5 Tms.	5 Con.	3 Tms.	of 10			4 Tms.	LEVEL II	LEVEL III	
3	Short serve	Level I 1	X							0	----			
		2	X							0	----			
			3	X						0	----			
			4	X						0	----			
			5					X		0	----			
			6			X				0	----			
			7			X				0	----			
			8		X					0	----			
			9		X					0	----			
			10			X				0	----			
			11			X				0	----			
		Level II												
		1		X					10		2.4000		4.4272	
		2		X					10		1.4000		.5164	
		3		X					9		1.5556		.7778	
		4		X					9		1.2222		.6667	
		5				X			9		1.1111		.3333	
		6				X			9		1.0000		0	
		Level III												
		1				X			8			8.2500	3.2404	

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				3 of 5	5 of 5	3 of 5					LEVEL II	LEVEL III		
3	cont'													
	Level III	2			X			7				7.7143	1.9760	
	cont'	3		X				8				1.6250	3.1250	
		4		X				8				1.6250	1.0607	
		5		X				8				1.5000	.7559	
		6		X				8				1.7500	1.1650	
		7				X		8				1.3750	.7440	
		8				X		8				1.1250	.3536	
4	Short serve	Level I												
	Doubles	1						0	----					
	Receiving	2						0	----					
		3						0	----					
		4						0	----					
		Level II												
		1			X			10			5.2000		.4216	
		2			X			10			5.5000		1.0801	
		3		X				10			1.4000		.6992	
		4		X				10			1.3000		.4830	

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION				6 of 10	4 Tms.	NO. SUB.	LEVEL MEANS			STAND. DEVIAT.
				of 5	5 Tms.	5 Con.	3 Tms.				LEVEL I	LEVEL II	LEVEL III	
4	Level II	5			X					8		4.7500		1.6690
Cont'	Cont'	6			X					10		4.7000		2.1108
		Level III												
		1			X					7			9.1429	4.5251
		2			X					7			7.2857	1.8898
		3		X						8			1.7500	1.1650
		4		X						8			1.3750	.7440
		5			X					8			6.7500	4.0970
		6			X					8			6.0000	2.4495
5	Short serve-	Level I												
	Singles	1	X							0	----			
		2	X							0	----			
		3	X							0	----			
		4			X					0	----			
		5			X					0	----			
		6				X				0	----			
		7				X				0	----			
		Level II												
		1	X							3		1.0000		

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6		NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				of 5	5	3	of 10	4			LEVEL II	LEVEL III		
5	Level II	2	X						3		1.0000		0	
Cont'	Cont'	3	X						3		1.0000		0	
		4			X				3		5.0000		0	
		5			X				3		5.0000		0	
		6				X			3		1.0000		0	
		7				X			3		1.0000		0	
		Level III												
		1	X						4			1.0000	0	
		2	X						4			1.0000	0	
		3	X						4			1.0000	0	
		4			X				4			5.0000	0	
		5			X				4			5.0000	0	
		6				X			4			1.2500	.5000	
		7				X			4			1.2500	.5000	
6	Short serve-	Level I												
	Singles	1	X						0	----				
	Receiving	2			X				0	----				
		3			X				0	----				

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				5 of 5	5 Con.	3 Tms.					LEVEL II	LEVEL III		
6		Level II												
Cont'		1	X					1		1.0000			0	
		2			X			1		5.0000			0	
		3			X			1		5.0000			0	
		Level III												
		1	X					4				1.0000	0	
		2			X			4				5.2500	.5000	
		3			X			4				5.0000	0	
7	Long Serve-	Level I												
	Singles	1	X					1	1.0000				0	
		2	X					1	1.0000				0	
		3	X					1	1.0000				0	
		4						1	1.0000				0	
		5						1	5.0000				0	
		6			X			1	5.0000				0	
		7			X			1	1.0000				0	
		8		X				1	1.0000				0	
		9		X				0	----					

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL MEANS			STAND. DEVIAT.
				5 Tms.	5 Con.	3 Tms.				LEVEL I	LEVEL II	LEVEL III	
7		Level II											
Cont'		1		X					14		3.0714		4.6486
		2		X					14		2.5714		1.6036
		3			X				13		7.0000		2.7080
		4			X				14		7.0714		2.6736
		5			X				13		11.0769		5.1066
		6			X				13		9.9231		4.6091
		7			X				12		9.8333		4.4279
		8			X				11		10.8182		4.5567
		Level III											
		1				X			5			1.6000	.8944
		2				X			4			2.2500	.9574
		3		X					4			1.2500	.5000
		4		X					4			1.0000	0
		5		X					4			3.5000	4.3589
		6		X					3			1.6667	1.1547
		7			X				5			9.8000	3.2711
		8			X				4			10.5000	3.3166

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION				6		NO. SUB.	LEVEL MEANS			STAND. DEVIAT.
				of 5	5	3	of 10	4	LEVEL I		LEVEL II	LEVEL III		
8	Long Serve	Level I												
	Singles	1	X							1	1.0000			0
	Receiving	2	X							1	1.0000			0
		3	X							1	1.0000			0
		4					X			1	3.0000			0
		5					X			1	3.0000			0
		Level II												
		1			X					14		5.9286		1.3281
		2			X					13		5.9231		1.8010
		3			X					13		6.4615		1.6132
		4			X					14		6.4286		1.8277
		5			X					13		5.6923		1.0316
		6			X					14		5.9286		1.4392
		Level III												
		1			X					4			6.0000	2.0000
		2			X					4			6.5000	1.9149
		3			X					3			5.0000	0
		4			X					2			5.5000	.7071
		5			X					3			8.0000	1.0000
		6			X					3			9.0000	5.2915

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL MEANS			STAND. DEVIAT.
				5 Tms.	5 Con.	3 Tms.				LEVEL I	LEVEL II	LEVEL III	
9	Long Serve-	Level I											
	Doubles	1	X					1	1.0000				0
		2	X					1	1.0000				0
		3			X			1	5.0000				0
		4			X			1	5.0000				0
		5				X		1	1.0000				0
		6				X		1	1.0000				0
		Level II											
		1		X				7		1.5714			1.1339
		2		X				7		1.8571			1.2150
		3		X				7		2.2857			1.3801
		4		X				7		1.5714			.7868
		5			X			6		9.0000			3.7417
		6			X			6		7.3333			1.6330
		7			X			6		9.5000			3.9875
		8			X			6		10.1667			4.2622
		Level III											
		1		X				13				2.1538	1.4051
		2		X				12				2.0000	1.7056
		3		X				12				2.4167	2.0652

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION				6		NO. SUB.	LEVEL MEANS			STAND. DEVIAT.
				of 5	5	3	of 10	4	LEVEL I		LEVEL II	LEVEL III		
9		4		X						12			2.0000	1.5954
		5		X						11			2.3636	1.8586
		6		X						11			2.6364	2.6181
		7			X					10			6.0000	1.8856
		8			X					11			6.4545	1.7529
10	Long Serve	Level I												
	Doubles	1	X							1	1.0000			0
	Receiving	2	X							1	1.0000			0
		3		X						1	1.0000			0
		4		X						1	1.0000			0
		Level II												
		1					X			7		4.4286		1.1339
		2					X			7		3.7143		.9512
		3					X			7		5.1429		2.1931
		4					X			7		4.8571		1.6762
		5				X				7		6.5714		2.4398
		6				X				7		6.1429		2.1931

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL MEANS			STAND. DEVIAT.
				5 of 5	5 Con.	3 Tms.				LEVEL I	LEVEL II	LEVEL III	
10		Level III											
cont'		1				X		11			5.5455	3.7514	
		2				X		10			5.8000	3.9665	
		3				X		9			8.8889	.9280	
		4				X		9			5.0000	4.0000	
		5			X			11			5.5455	1.6949	
		6			X			10			5.0000	.9428	
11	Modified	Lev. I											
	Singles	1						1	8.0000				0
	Game	Lev. II											
		1						5		7.4000			2.4083
		Lev. III											
		1						14			8.1429		2.6849
12	Drive	Lev. I											
	Serve	1	X					0	----				----
		2	X					0	----				----
		3			X			0	----				----
		4			X			0	----				----

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6		NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				of 5	5	3	of 10	4			LEVEL II	LEVEL III		
12		5							0	----				
Cont'		Level II												
		1	X						4		1.0000		0	
		2		X					4		1.7500		1.5000	
		3		X					4		2.7500		1.7078	
		4		X					4		3.0000		2.1602	
		5		X					4		1.5000		1.0000	
		6			X				4		2.7500		.5000	
		7			X				4		5.5000		5.0000	
		Level III												
		1	X						14			1.0000	0	
		2		X					14			2.2143	1.4769	
		3		X					14			2.0714	1.4392	
		4		X					13			2.0000	1.2247	
		5		X					14			1.6429	1.1507	
		6						X	13			5.1538	1.4051	
		7						X	13			5.0000	1.5275	
13	Drive	Level II												
	Serve	1					X		4		3.7500		.9574	

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION				6 of 10	4 Tms.	NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				5 of 5	5 Tms.	5 Con.	3 Tms.					LEVEL II	LEVEL III		
13		2					X		4		4.5000		1.2910		
Cont'		3		X					4		5.0000		1.6330		
		4		X					4		5.0000		1.6330		
		Level III													
		1					X		11			6.0000	3.6056		
		2					X		12			5.9167	3.0588		
		3						X	11			5.7273	1.9022		
		4						X	10			5.5000	1.6499		
14	Flick	Level III													
	Serve	1		X					5			6.4000	2.1909		
		2		X					5			5.0000	0		
		3					X		5			6.4000	2.1909		
		4					X		5			5.2000	.8367		
15	Flick	Level III													
	Serve	1		X					6			5.000	0		
	Receiving	2		X					6			5.000	0		
		3					X		6			5.000	0		
		4					X		6			5.000	0		

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				5 of 5	5 Tms.	5 Con.					LEVEL II	LEVEL III		
16	Backhand	Level III												
	Serve	1		X				10				5.3000	.6749	
		2		X				10				5.1000	.3162	
		3		X				9				5.7778	1.3944	
		4		X				9				5.3333	.7071	
17*	Overhead	Level I												
	Clear	1	X					0	----					
		2					X	0	----					
		3				10		0	----					
		Level II												
		1					X	4			1.5000		.5774	
		2		X				5			1.2000		.4472	
		3		X				5			1.6000		.8944	
		4				15		5			1.0000		0	
		5		X				5			1.2000		.4472	
		Level III												
		1					X	11				1.1818	.4045	
		2		X				11				1.1818	.4045	
		3		X				11				1.2727	.6467	

*In the Overhead Clear Module, one objective per level requested the students to hit continuously a designated number. That number of recorded in the column of 5 consecutive hits.

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			3 of Tms.	6 of 10	4 Tms.	NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				5 of 5 Tms.	5 Con.	5						LEVEL II	LEVEL III		
17		4				20				11			1.9090	.3015	
Cont'		5		X						11			1.2727	.6467	
18	Overhead	Level I													
	Drop Shot	1		X						0	----				
		2		X						0	----				
		3		X						0	----				
		Level II													
		1		X						3		6.0000	1.7321		
		2		X						5		6.0000	1.0000		
		3		X						5		5.8000	1.7889		
		Level III													
		1		X						8		6.1250	1.8077		
		2		X						10		6.0000	1.8856		
		3		X						10		5.8000	1.5492		
19	Smash *	Level I													
		1	X							0	----				
		2	X							0	----				
		3						10		0	----				

*In the third objective of Level I, the instructions were to hit 10 smashes. This number was recorded in the 6 out of 10 category.

MODULE NUMBER	MODULE NAME	OBJECTIVE NUMBER	COG.	3 CRITERION			6 of 10	4 Tms.	NO. SUB.	LEVEL I	LEVEL MEANS			STAND. DEVIAT.
				of 5	5 Con.	3 Tms.					LEVEL II	LEVEL III		
19		Level II												
Cont'		1		X				5		5.8000			.8367	
		2		X				5		5.6000			.8944	
		3		X				5		5.8000			1.0954	
		Level III												
		1		X				11			6.4545		2.9108	
		2		X				11			6.6364		3.9566	
		3		X				11			6.4545		3.9335	
		4		X				11			5.5455		1.5076	

Module No. and Name	Obj. No.	Sv. Eff.	Sv. Ineff.	Rt. Sv. Ef.	Rt. Sv. Inef.	Shot Ch. Ef.	Shot Ch. Inef.	Fault	Level I	Level II	Level III	No. Sbj.	Stand. Deviat.
20	1	x							27.0000			1	0
Level I	2		x						73.0000			1	0
Game	3			x					67.0000			1	0
Plav	4				x				33.0000			1	0
Singles	5					x			29.0000			1	0
	6						x		71.0000			1	0
	7							x	4.0000			1	0
Level II													
	1	x								79.5000		4	17.3301
	2		x							20.5000		4	17.3301
	3			x						37.5000		4	18.0093
	4				x					62.7500		4	18.4639
	5					x				53.0000		4	20.2938
	6						x			47.0000		4	20.2938
	7							x		4.7500		4	5.1235
Lev. III													
	1	x									57.7692	13	27.1114
	2		x								34.6154	13	23.2792
	3			x							41.5385	13	27.1711
	4				x						50.7692	13	28.5516
	5					x					61.6154	13	21.1366
	6						x				38.7692	13	21.1784
	7							x			40.769	13	2.7526

Module No. and Name	Obj. No.	Sv. Eff.	Sv. Ineff.	Rt. Sv. Ef.	Rt. Sv. Inef.	Shot Ch. Ef.	Shot Ch. Inef.	Fault	Level I	Level II	Level III	No. Sbj.	Stand. Deviat.
21	Lev. I												
Game	1	x							50.0000			1	0
Play	2		x						50.0000			1	0
Doubles	3			x					0.0000			1	0
	4				x				100.0000			1	0
	5					x			20.0000			1	0
	6						x		80.0000			1	0
	7							x	1.0000			1	0
Lev. II	1	x								88.7500		4	13.1498
	2		x							11.2500		4	13.1498
	3			x						64.5000		4	29.2859
	4				x					35.5000		4	29.2859
	5					x				47.5000		4	33.8230
	6						x			52.5000		4	33.8280
	7							x		1.5000		4	1.0000
Lev. III	1	x									65.8333	12	31.8058
	2		x								54.1667	12	31.8058
	3			x							44.5833	12	25.6390
	4				x						55.4167	12	25.6390
	5					x					47.3333	12	24.6441
	6						x				52.8333	12	24.7160
	7							x			1.7500	12	1.2154

APPENDIX E

DIRECTIONS

Work through each section step by step until you have completed each module. Every module contains various levels. Level I is required in each module unless otherwise stated in order for you to successfully complete the minimum course requirements. When you complete Level I, you may then progress to the next higher level or to the next module. Before progressing to the next module, be sure you read the stated prerequisites. You may not choose to work on a module unless you can meet the stated prerequisites.

If when entering a module you consider that you already possess the necessary skills and knowledges to proceed to a higher level, or to proceed to the next module, you may come to the instructor and request a post-assessment. The post-assessment will involve some or all of the stated components of the Level or the Module.

The check-offs for each Level components will be done as stated in the directions. Most of the compoments leading to the post-assessment are done by the student and a peer. The post-assessment is done by the instructor.

If the student requests and fails to complete the requirements, a suggested remediation program will be offered by the instructor. If the student completes the post-assessment, he/she may then proceed to the next higher Level or to the next Module.

If when working through the Level objectives the student, after a specified number of attempts at a skill, is unsuccessful, he/she should stop working on that specific skill and instead go to the suggested program if one is stated following that objective. The learning alternative will be in capital letters after the objective. After you have successfully completed the learning alternative you will return to your original objective and follow all directions. If there is not an alternative program suggested, and if the learner has had three sets of five unsuccessful attempts, do not continue, instead ask the instructor for assistance.

MODULE COMPONENTS

All modules contain the following components:

- (1) Introductory statements
- (2) Level objectives
- (3) Prerequisites
- (4) Pre-assessment
- (5) Learning alternatives or Instructional activities
- (6) Post-assessment
- (7) Remediation suggestions

NOTE: Module component number 5 above and the stated learning alternatives following level objectives are not the same; however, the learning alternative may be one or more components of the Instructional activities.

The student progresses through each module at his/her own speed. Their individual progress is recorded by means of: (1) student check-offs; (2) peer assessment (when indicated); (3) post-module assessment by the instructor.

Each student must successfully complete Level I of each required module. The level objectives in each module increase in skill difficulty and knowledge application. Level

I consists of learning the skill, Level II of accuracy and placement, and Level III of accuracy, placement, strategy, and/or court positioning.

The student may select from a variety of learning activities or instructional activities. Ones that the instructor feels are the most complete for each module are noted by an asterisk (*). It is not a requirement that the student select those sources, it is only suggested that these might be the most beneficial.

APPENDIX F

INTRODUCTION, HISTORY, EQUIPMENT, GRIPS

PREREQUISITES: None

ESTIMATED TIME: Unknown

LEVEL OBJECTIVES:

SINCE THIS MODULE IS CONSIDERED TO BE A BASIC CORE OF INFORMATION FOR THE FOLLOWING MODULES, THE STUDENT MUST COMPLETE THE POST-ASSESSMENT BY WEDNESDAY, SEPTEMBER 24, 1975.

Level I. OBJECTIVES

1. Given a diagram of the court, the student will indicate the court dimensions and name the court lines with 100% accuracy.
2. The student will select the best racket for himself/herself, based upon the information he/she read on selection of equipment.
3. The student will, with 90% accuracy, pass a written examination over the history of badminton.

Level II. OBJECTIVES

1. Given a diagram of the court, the student will indicate the court dimensions and name of court lines with 100% accuracy.
2. The student will select the best racket for himself/herself, based upon the information he/she read on selection of equipment.
3. The student will, with 90% accuracy, pass a written examination over the history of badminton and care and selection of equipment.

Level III. OBJECTIVES

1. Given a diagram of the court, the student will indicate the court dimensions and name the court lines with 100% accuracy.
2. The student will select the best racket for himself/herself, based upon the information he/she read on selection of equipment.

3. The student will, with 90% accuracy, pass a written examination over the history of badminton, the care and selection of equipment, and values gained through participation.

INSTRUCTIONAL ACTIVITIES:

The student may select from any or all of the suggested resources. It is not necessary, however, that the student refer to only the following resources:

1. Attend the introductory session conducted by the instructor. (See attached schedule.)
2. Ask a classmate for assistance.
3. Read the appropriate sections in the NAGWS OFFICIAL RULE GUIDE.
4. Read pages 1-11 in BADMINTON by Burris and Olson.
5. Read pages 77-80 in INDIVIDUAL SPORTS FOR WOMEN by Broer, et al.
6. Read pages 84-87 in INDIVIDUAL SPORTS by Hale.
7. Read pages 1-5 in BADMINTON by Bloss and Brown.
- *8. Read pages 1-10 in BADMINTON by Johnson.
- *9. Read pages 3-14 and 33-36 in BADMINTON by Pelton.
- *10. Read pages 1-4 and 11-13 in BADMINTON by Poole.

POST-ASSESSMENT: The student should refer to the level objectives. When the student successfully completes the stated competencies, he/she has completed the post-assessment.

REMEDIATION: If the student fails to complete the post-assessment, a program will be recommended by the instructor for overcoming deficiencies and/or weaknesses.

INTRODUCTION AND HISTORY

Badminton can be an enjoyable activity for people of all ages. It is and can be played by both men and women,

competing or playing separately or together. Badminton is considered and played both as a competitive sport or engaged in for recreational pursuits.

Badminton and tennis are, in some ways similar, and in some ways not similar. The similarities are that both badminton and tennis are played with an implement referred to as a racket, which is used to strike an oncoming object. Also, both sports are played on rectangular surfaces called courts.

The differences between the two sports lie mainly in the areas of racket size, court size, and the anatomical and mechanical differences of the body parts when striking or hitting the object. In tennis the ball is designed to rebound from the court, and the hit may come following the rebound. In badminton the shuttle has to be struck before it touches the court surface. The tennis ball is proportionally larger, heavier, and shaped differently from the badminton shuttle. The shuttle is constructed in such a way that it is highly sensitive to air flow. Because of this sensitivity, all competitive tournaments must be played indoors, whereas in tennis, tournaments are played both indoors and outdoors. The court, or playing surface, though both are rectangular, are different in size. The badminton court is in total size smaller than the total size of the tennis court.

The flight trajectory differs for the shots used in playing badminton. Figure 5 (p. 187) indicates the shots and their proper flight pattern. Every good shuttle spins as it flies

through the air. This spin provides for a more accurate shot. Consequently, playing in a drafty room or near an open door provides too much of an air flow and will affect the flight of the shuttle. When a player feels that the flight of the shuttle is not a true flight, he/she should test the flight pattern by underhand hitting it in the approved or Official manner.

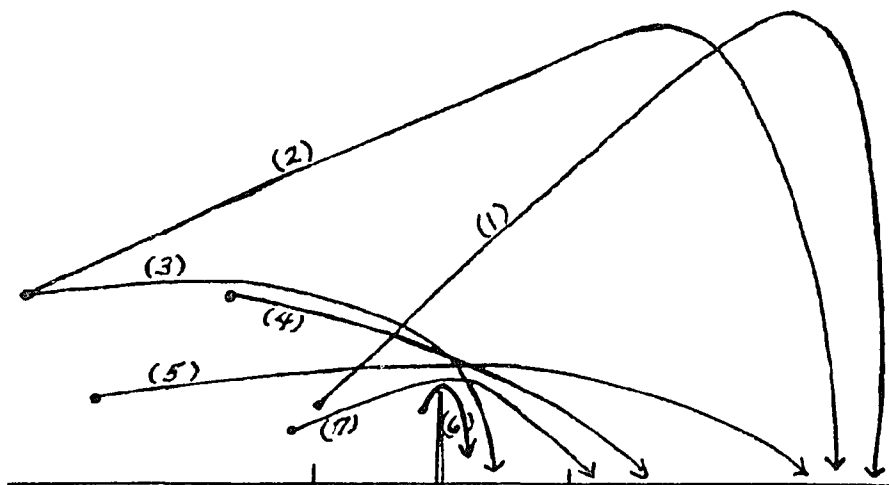


Figure 5. Flight Trajectory

- (1) High serve (singles)
- (2) Overhead clear
- (3) Drop
- (4) Smash
- (5) Drive
- (6) Net or hairpin drop
- (7) Short serve

The history of badminton is somewhat obscure. There appears to be a difference in thought among authors as to

exactly when the idea behind the game was originated. There are, however, documents which indicate evidence that the game was played in several countries.

Pelton stated the following in regard to the historical background and development of the sport:

It is difficult to trace the historical development of a particular game as it is played in our contemporary society. However, most sport historians agree that badminton as it is now played developed from a similar game played in China and Siam. This game was referred to as battledore or shuttlecock. The game was further developed in India and was called poona. Noticeable gaps appear in the historical accounts of the game, but authoritative sources reveal that after certain British officials witnessed the playing of the game in India, they introduced it in England. It received the name of badminton because a duke played it at his country estate, known as Badminton . . . (Pelton, 1971,p.34)

The founding of the first Badminton Club is somewhat a mystery. It has been reported, however, that it was formed around 1873 in Bath, England.

The original rules for playing were drawn up in 1877. They were revised in 1887, and again in 1890. Our present rules do not differ greatly from the 1890 draft.

The present court dimensions and shape were adopted in 1901. Prior to this, most courts were of the hourglass shape. This particular shape can be traced back to the shape of the Duke of Beaufort's room in which the game was played.

In the 1890's Badminton was introduced to the United States and Canada. In 1925 and 1930 an English Badminton team toured Canada. Following this tour badminton interest

and play increased in the United States and Canada. The Canadian Badminton Association was formed in 1931, and the American counterpart, the American Badminton Association (ABA) was formed in 1936. (Poole, 1969, p. 2-3)

In the 1890's the first All-England Championship for men was played. This tournament is the oldest and most famous in the world. It served as a great impetus for the game of Badminton throughout the British Isles. It was a few years before a tournament for women was conducted. It is reported, however, that a Women's Championship was held in 1900.

The International Badminton Federation was founded in 1934. The forming of this organization gave great impetus to international play. Sir George Thomas, a famous English player, presented the Thomas Cup to be challenged for by members of the IBF. After a delay caused by the outbreak of the 1939 war, the first International Competition for men, for the Thomas Cup was conducted in 1948. This competitive event is held triennial, with Malaya and Indonesia the usual winners.

Mrs. H. S. Uber is credited for instigating the first International Competition for women in 1950. She donated the trophy, know as the Uber Cup, as a symbol of international supremacy. Like the male counterpart tournament, it is conducted at three year intervals.

Badminton was not widespread in the United States until the 1930's. The first American championships were held in 1937 in Chicago.

Even though the United States has never won the Thomas Cup, we have won the Uber Cup several times, including the first one. The popularity of Badminton is spreading across the United States, with numerous clubs emerging every year. It is not only an enjoyable recreative activity, but also a competitive event which requires a high level of skill of the performers.

EQUIPMENT

Badminton equipment consists of rackets, shuttlecocks, and nets. Poles, or some other type of standards are also needed for support of the net.

Equipment varies in price. Rackets range from a relatively inexpensive sum of approximately \$3.00 to a more costly figure of about \$35.00. The price of nets are commensurate with the quality of the material used for stringing. The price of shuttles is primarily dependent upon the type of material used in their manufacturing.

RACKETS

International badminton rules do not specifically state the size, shape, or weight of the racket to be used in competitive play. Most rackets are constructed of laminated wood, a combination of laminated wood and metal, or entirely of tubular metal.

When choosing a racket, lightness should be a primary consideration. Normally, rackets vary in weight from $34\frac{1}{4}$ up to $51\frac{1}{2}$ ounces.

The racket consists of four major parts: (1) the head (frame), (2) the strings, (3) the shaft, and (4) the grip (see Figure 2). Some authors of badminton texts refer to them by differing names, but basically agree on the part divisions. The usual length of a racket is about 26 inches.

Racket strings consist of either gut or nylon. Poole stated the following concerning the types of stringing material:

. . . Most players who use the wood frame use gut because of the resiliency and 'playability.' These rackets, if strung tightly must be kept in a press in order to prevent warping. Those who use the relatively new metal rackets use either gut or nylon. The advantage of nylon in these frames is that it can be strung more tightly than gut and has a longer life. These rackets need no press, since they do not warp (Poole, 1969, p. 11).

The gut lamb twisted stringing is very resilient, but also tends to ravel in wet weather. For metal rackets, the tournament nylon braided stringing is often used. This type of string is durable and it can also, when used in the tubular metal rackets, be pulled very tight (Johnson, 1974).

The stringing tension varies with the type of racket. A common tension for wooded headed rackets is 12 pounds, and in the metal tubular rackets it is 18 pounds. When having the racket strung, it is a good idea to talk with a professional stringer who will be able to recommend the tension poundage for the particular racket (Johnson, 1974).

The grip size of the racket should be one that feels comfortable for each player. The grooves or facets of the grip

which are parallel to the face should be wider than those which are in line with the frame. The size of grips range from 3 to 4 inches in circumference. The most common grip sizes are 3 1/2 to 3 3/4 inches.

The grip should be covered with a thin layer of leather, or some other similar material to prevent the racket from slipping in the hand. When the grip becomes worn smooth or loose it should be replaced.

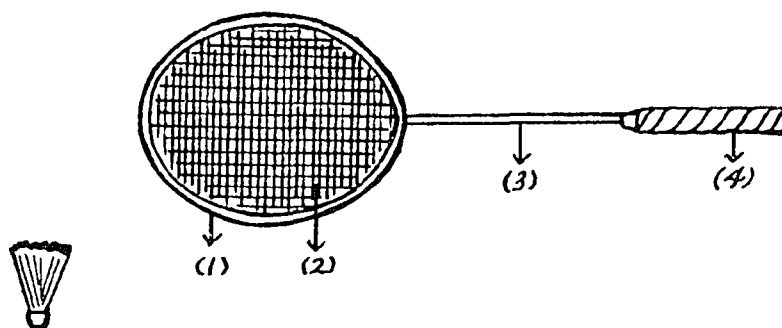


Figure 6. Playing Equipment

SHUTTLES

Three terms are used interchangeable for the object which is struck by the racket. These three terms are shuttlecock, shuttle, and bird. Shuttle will be used throughout this manuscript.

The shuttle is made of two different types of material--nylon or white goose feathers. The feathered shuttle is more expensive than the nylon shuttle, but is also recommended for tournament play. The feathered shuttle weights from 73 to 85

shuttles come in three different speed markings--green, red, and blue. Green is for slow flight, blue for average, and red for fast. In order to judge a shuttle to be of the correct pace, an average strength player stands in a sport immediately above one back boundary line in a line parallel to the sidelines, and strokes the bird with an underhand stroke at an upward angle. If the shuttle falls not less than 1 foot and not more than 2 feet 6 inches short of the other boundary line, it is deemed to be a playable shuttle.

NETS

The net used for play should be slightly longer than 20 feet, to allow the net webbing to entirely cover the width of the court. The net must be made of a dark color, fine natural cord or artificial fiber. The cord must be of even thickness not exceeding 5/8 inch to 3/4 inch mesh. The net should be able to be firmly stretched from pole to pole and should be 2 feet 6 inches in depth. The top of the net should be edged with a 3-inch white canvas tape which is doubled and supported by a cord or cable running through the tape. If possible, this cord or cable should be flush with the top of the pole or post.

PLAYING COURT

The measurements of a regulation badminton court are: 20 feet wide and 44 feet long. The court diagram (Figures 7-9, p.194) indicates the dimensions and distances for both singles and doubles play.

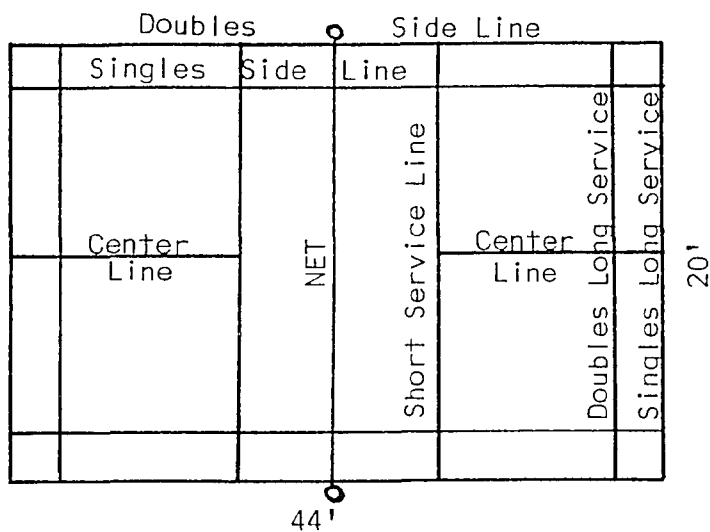


Figure 7. Playing Court Dimensions

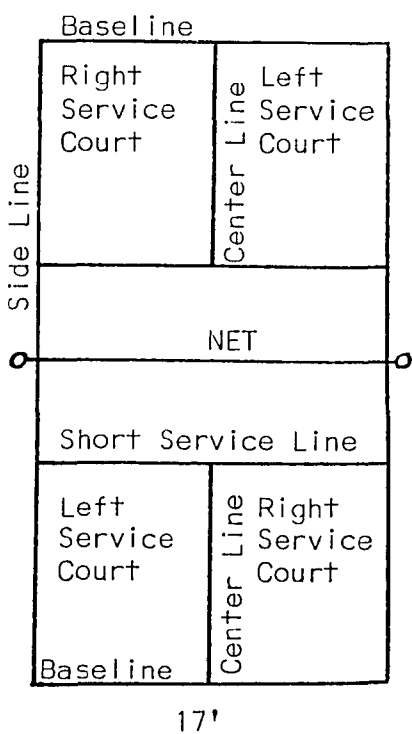


Figure 8. Singles Court

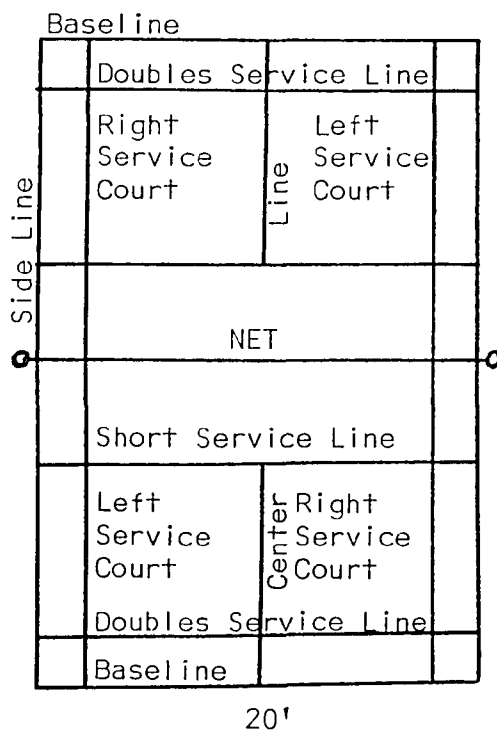


Figure 9. Doubles Court

grains, and is composed of 14 to 16 matched clipped goose wing feathers which are inserted and glued into a cork base, 1 inch to 1 1/8 inches in diameter. The cork base is covered by a thin layer of leather. The feathers, from the tip to the top of the cork base, should be 2 1/2 to 2 3/4 inches in length. According to Poole, the average shuttle for most heated courts is 76 grains, but that the room temperature should determine the grain shuttle to be used. In order to get the proper weight of the shuttle, lead shots are added to obtain the desired weight.

Feathered shuttles should be stored in a cool moist area in order to keep the feathers moist, and to help prevent brittleness and breaking, as well as weight changes of the shuttle. If a feather, during a rally, comes out of the cork, or breaks off, the flight pattern is affected, and should no longer be used during competitive play. The length of their life may be a set, or may be a single hit.

The nylon shuttle has recently become increasingly popular, partly because of its inexpensive cost, but also due to its durability and relative stable flight. Carlton Nylon Shuttles, of the Tournament and International grades, and RSL Plastic Shuttles have been approved for closed tournaments and championships lower than class A tournaments, with the exception of adult "open" tournaments for which a fee of \$5 is charged for sanctioning, Closed and Open ABA Amateur Championships, and the U.S. National Junior Championship. Nylon

The court lines must be 1 1/2 inches wide. The lines may be either painted or taped on the floor.

When possible, it is preferable and advantageous to the players to place the net standards on the side boundary line. If this is not possible a vertical marker, made of a thin poster strip of material not less than 1 1/2 inches in width, rising from the sideline must be affixed to the net for tournament play. By having either the standards or a marker of the boundary line, helps to orient the player to the court boundaries without looking down at the lines.

The top of the net from the floor must be a distance of 5 feet 1 inch at each side boundary, and allowing for some sag, 5 feet from floor to net top, in the center of the court.

Proper clearance above the court should be 26 feet for tournament play. Proper clearance for international competition play is a minimum of 26 feet from the floor over the entire court. If there is not proper clearance, it prohibits the type of shot to be used. There must be 4 feet of clear, unobstructed space surrounding all the outer boundaries of the court. This distance is also considered to be a minimum distance between courts which are side-by-side.

THE GRIP

The grip is the way in which a player holds the racket. Most shots or strokes are executed with either a forehand or backhand grip. The forehand grip refers to hitting the shuttle

on the racket side of the body. The backhand grip refers to hitting shots which are on the opposite side of the racket side of the body.

The two grips most used in badminton are the forehand and the backhand. When using either grip, it is important to remember to keep the racket face open so that the palm of the hand and the racket face are in the same plane. This will place the racket face perpendicular to the direction of the hit.

DESCRIPTION OF THE FOREHAND: This grip is often times referred to as the handshake grip. A "V" is formed by the thumb and index finger as the racket is held in the proper hand. This "V" should be on or slightly to the side of a beveled edge on the thin side of the handle. When using the grip, the racket face should be perpendicular to the playing surface. Grip the racket firmly but not too tight. The thumb and the first finger should apply most of the holding pressure.

DESCRIPTION OF THE BACKHAND: To switch from the forehand to the backhand grip, move the thumb from the wrapped-around grip position to a more straightened position on the upper left bevel. The knuckle of the first finger will be slightly to the left of the top bevel.

NOTE: Some authors advocate no difference between the two grips and the racket remains in the same position.

DESCRIPTION OF THE FRYING PAN: This grip is not used to any great extent while playing. It is mostly used in doubles when playing short net shots. In order to grip the racket with the frying pan grip, lay the racket on the floor and pick it up so that the face is parallel to your body. The butt of the racket should extend an inch below the palm of your hand.

FOOTWORK AND COURT POSITIONING

In order to effectively become a good badminton player, it is important to be ready to move quickly to any area of the court. A player must be in control of his/her body at all times as well as being able to quickly react to any situation that occurs.

Efficiency of movement is instrumental to good play. You cannot effectively hit the shuttle if you are in the wrong position on the court, or if your body is off-balance. It is not only imperative that a player be able to move any direction from a somewhat stationary ready position, but also that he/she be able not only to change directions, but also be able to control the speed of the movement of the body in order to properly line up the body with the flight of the shuttle.

A player has to develop a spatial or kinesthetic awareness as to where he/she is in relation to the shuttle, the boundary lines, and where he/she needs to move prior to and after striking the shuttle. Movement on the court should become a natural reaction. For instance, it should become a conditioned action that the last step taken before striking the shuttle should be taken with the racket foot.

PREREQUISITES: None to enter Level I of the module.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None to enter Level I of the module. If the student wishes to enter the module at a higher level, he/she must demonstrate competency to the instructor. If the student wishes a pre-assessment he/she should indicate this to the instructor.

LEVEL OBJECTIVES:

THE STUDENT MUST COMPLETE THE OBJECTIVES IN THE CORRECT NUMERICAL ORDER

Level I. OBJECTIVES

1. The student will assume a correct ready or home position for singles play.
2. The student will assume a correct ready or home position for doubles play.
3. The student, starting from a singles ready position, will move efficiently to the baseline and then back to his/her original home or ready position. LEARNING ALTERNATIVE--REVIEW SUGGESTED INSTRUCTIONAL ACTIVITIES.
4. The student, starting from a singles ready position, will move efficiently to the net and then back to his/her original home or ready position.
5. The student, starting from a singles ready position, will move efficiently to his/her right sideline and then back to his/her original home or ready position.
6. The student, starting from a singles ready position, will move efficiently to his/her left sideline and then back to his/her original home or ready position.
7. The student, starting from a singles ready position, will move to his/her forehand backcourt and then back to his/her original home or ready position.
8. The student, starting from a singles ready position, will move to his/her backhand backcourt and then back to his/her original home or ready position.
9. The student, starting from a singles ready position, will move to his/her forehand forecourt and then back to his/her original home or ready position.
10. The student, starting from a singles ready position, will move to his/her backhand forecourt and then back to his/her original home or ready position.

Level II. OBJECTIVES

1. The student will assume a correct home or ready position for singles play.
2. The student will assume a correct home or ready position for doubles play.
3. When asked by the instructor, the student will analyze an efficient body position during the ready position.
4. Starting from a stationary singles ready or home position, the student will efficiently move backwards to his/her baseline and then return to his/her original ready or home position.
5. Starting from a stationary singles ready or home position, the student will efficiently move forward to net center and then return to his/her original ready or home position.
6. Starting from a stationary singles ready or home position, the student will efficiently move to his/her right sideline and then return to his/her original ready or home position.
7. Starting from a stationary singles ready or home position, the student will efficiently move to his/her left sideline and then return to his/her original ready or home position.
8. The student will execute footwork drill number 1 five consecutive times, resting for 30 seconds between each trial.
9. The student will execute footwork drill number 2 five consecutive times, resting for 30 seconds between each trial.

Level III. OBJECTIVES

1. The student will assume a correct home or ready position for singles play.
2. The student will assume a correct home or ready position for doubles play.
3. When asked by the instructor, the student will analyze an efficient body position during the ready position.

4. Starting from a stationary singles ready or home position, the student will efficiently move backwards to his/her baseline and then return to his/her original ready or home position.
5. Starting from a stationary singles ready or home position, the student will efficiently move forward to net center and then return to his/her original ready or home position.
6. Starting from a stationary singles ready or home position, the student will efficiently move to his/her right sideline and then return to his/her original ready or home position.
7. Starting from a stationary singles ready or home position, the student will efficiently move to his/her left sideline and then return to his/her original ready or home position.
8. The student will execute footwork drill number 1 five consecutive times, with each trial being completed in 15 seconds, and resting 30 seconds between each trial.
9. The student will execute footwork drill number 2 five consecutive times, with each trial being completed in 30 seconds, and resting 30 seconds between each trial.
10. The student will execute footwork endurance skill number 3 five consecutive times, resting for 10 seconds at the end of each completed trial.

INSTRUCTIONAL ACTIVITIES: The student may select from any of the following suggested learning activities. It is not required that the student only refer to the following sources.

1. Attend teaching session conducted by instructor. (See attached schedule.)
2. Ask a classmate for assistance.
3. Review Footwork loop films.
4. Review the AIAW National Tournament films.
5. Review wall charts on Footwork and Court Positioning.
6. Review practice drills posted on the wall.

- *7. Read pages 41-47 in BADMINTON by Poole.
- *8. Read pages 11-16 in BADMINTON by Johnson.
9. Read pages 17-18 in BADMINTON by Pelton.
10. Read pages 95-100 in INDIVIDUAL SPORTS by Hale.
- *11. Read pages 7-10 in BADMINTON by Bloss and Brown.
12. Read pages 83-85 in INDIVIDUAL SPORTS FOR WOMEN by Broer, et al.

POST-ASSESSMENT: The student, after completing the objectives, should come to the instructor and request a post-assessment. Do not continue to the next higher level set of objectives until you have successfully completed the post evaluation. The instructor conducts the post-assessment, which consists of the instructor selecting any or all of the competencies to be demonstrated by the student.

REMEDIATION: If the student fails to successfully complete the post-assessment, a program will be suggested by the instructor to assist the student to overcome his/her deficiencies and/or weaknesses. If at any time during the course of completing the objectives the student is having difficulty he/she should exit from the module objectives and request assistance from the instructor. At this time the instructor will recommend a series of learning assistants for the student.

FOOTWORK DRILL NUMBER 1:

This drill is designed as a practice for: (1) agility and (2) directional change.

DIRECTIONS:

The student assumes a starting position behind the baseline in his/her right alley. On a command to start the student runs forward until he/she is a racket length from the net, then slide step across the net front until he/she is in the left court alley, then either back pedal or slide step to the baseline, then cross over and run to original starting position. The run back to starting position should be with the player's left side to the net. This entire sequence completes one trial.

FOOTWORK DRILL NUMBER 2

This drill introduces the student to all directional changes.

DIRECTIONS:

The student assumes a starting position of a singles ready or home position. Move in the following directions, quickly but accurately, being certain that in between each directional change you return momentarily to your original home or ready position.

1. Move to a racket length from center net, then return to home position.
2. Move to center back baseline, then return to home position.
3. Move to right sideline, then return to home position.
4. Move to left sideline, then return to home position.
5. Move to rear forehand corner, then return to home position.
6. Move to rear backhand corner, then return to home position.
7. Move to forehand forecourt, then return to home position.
8. Move to backhand forecourt, then return to home position.

COMPLETION OF 1-8 EQUALS ONE TRIAL

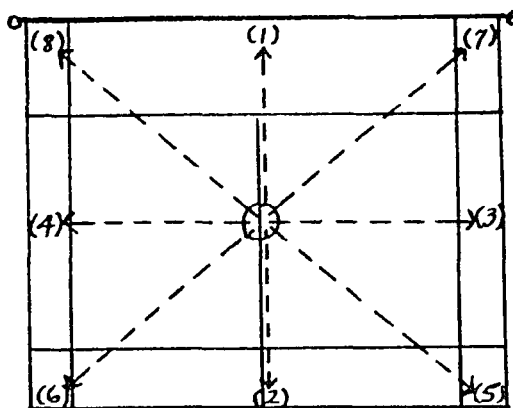


Figure 10. Precision Footwork Drill

FOOTWORK DRILL NUMBER 3

This drill is designed to assist the student in developing competency in quick movement forward and backward. It also serves as a means for endurance development.

DIRECTIONS:

The student runs the full length of the court (44 feet) forward as quickly but accurately as possible. STOP. Count to 10. Back pedal or back slide the length of the court (44 feet). STOP. Count to 10. This completes one trial.

The student should keep the same counting pace and running speed throughout the entire drill.

APPENDIX H
SUPPLEMENT TO MODULES 20 AND 21
STRATEGY AND COURT COVERAGE

Basic strategy or tactics in playing badminton is to hit the shuttle where the opponent is not, or to hit a type of shot that he/she will have difficulty returning. Each player devises his/her own game plan which consists of strategic maneuvers and shot choices based upon strengths and weaknesses of all players involved.

There are certain general basic strategic tactics that can benefit most players. Some examples of these general tactics are: (1) never change your method of play when you are winning; (2) change your style when you are not winning; (3) beat your opponent as quickly as possible; (4) play your style of game rather than your opponents'; (5) develop an aggressive attitude--don't let up when you are ahead and don't give up when you are behind; and (6) concentrate at all times on the match and don't be distracted by outside influences. If a player has accomplished the above mentioned points, then he/she is ready to advance to a higher level set of strategic competencies.

In badminton, as in other sports, both defensive and offensive play are important aspects. Offensive shots, which are also oftentimes referred to as attacking shots, are point winning shots. They are those shots which are directed downwards, whereas defensive shots are those which are hit upwards.

Angle of return is an important consideration for the badminton player. A player should be aware of shot placement and be able to anticipate the possible angles of the return shot.

When it is to the players' advantage to use crosscourt and down-the-line shots are important tactical considerations. When playing, these decisions have to be made instantly. A player should master both of these types of shots and be able to, when possible, disguise which type of shot he/she is going to hit.

Serve type and placement and the return of serve are two important strategic aspects. A player should be aware of the advantages and disadvantages of delivering any type of serve, as well as anticipate probable returns, based upon the type of serve that was delivered.

There are certain major tactical differences between playing singles and doubles. One major difference is the number of people involved. Shot choices also differ between the two types of games. An outstanding singles player does not always make a good doubles player, and vice versa.

There are three basic types of doubles court coverages: (1) up-and-back; (2) side-by-side; and (3) a combination of up-and-back and side-by-side often times referred to as rotation. Beginning players usually choose either 1 or 2 stated above, whereas more advanced players prefer a combination type of coverage. Once the two basic types of coverage have been mastered, the players should play a combination coverage

which changes from up-and-back to side-by-side as the play changes from offensive to defensive.

Mixed doubles always matches one man and one woman, playing as partners, against another man and women. Up-and-back is probably the most used type of coverage used, with the women playing primarily in the up or net position.

A player should study carefully all the strategic elements of good play. Stroke execution is one important aspect but strategy should not be ignored, even by the beginning player.

NOTE: Strategy (court movement) is combined with all strokes. This module introduces the student to the basic strategic considerations.

PREREQUISITES: The student must have completed at least all Level 1.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student.

LEVEL OBJECTIVES:

Level I. OBJECTIVES

1. The student will pass a written examination, which covers both singles and doubles strategy with 85% accuracy.
2. The student will be rated during singles play, on the rating scale stated strategy components, and receive at least 40% effectiveness on the shot choice category.
3. The student will correctly execute the up-and-back system of doubles coverage during an entire doubles game.
4. The student will correctly execute the side-by-side system of doubles coverage during an entire doubles game.

Level II. OBJECTIVES

1. The student will pass a written examination, which covers both singles and doubles strategy, with 85% accuracy.
2. The student will be rated during singles play, on the rating scale stated strategy components, and receive at least 50% effectiveness on the shot choice category.
3. The student will correctly execute the up-and-back system of doubles coverage during an entire doubles game.
4. The student will correctly execute the side-by-side system of doubles coverage during an entire doubles game.
5. The student will, during a doubles game, select the most advantageous court coverage to use, dependent upon the type of serve delivered.

Level III. OBJECTIVES

1. The student will pass a written examination, which covers both singles and doubles strategy, with 85% accuracy.
2. The student will be rated during singles play on the rating scale strategy components, and receive at least 60% effectiveness on the shot choice category.
3. The student will correctly execute the up-and-back system of coverage during an entire doubles game.
4. The student will correctly execute the side-by-side system of coverage during an entire doubles game.
5. The student will correctly execute the rotational system of coverage during an entire doubles game.

INSTRUCTIONAL ACTIVITIES:

- *1. Attend teaching session by instructor. (See attached teaching schedule.)
- *2. Review AIAW National Badminton Doubles and Singles Final matches.
3. Ask a classmate for assistance.

4. Read pages 51-53 in BADMINTON by Pelton.
- *5. Read pages 61-82 in BADMINTON by Poole.
6. Read pages 92-93 in INDIVIDUAL SPORTS by Hale.
- *7. Read pages 75-90 in BADMINTON by Johnson.
- *8. Read pages 45-87 in BADMINTON by Bloss and Brown.
9. Read pages 102-105 in INDIVIDUAL SPORTS FOR WOMEN by Broer, et al.
- *10. Read pages 47-51 in BADMINTON by Burris and Olson.
- *11. Read pages 12-21 and 22-63 in ADVANCED BADMINTON by Rogers.

POST-ASSESSMENT: The instructor will evaluate the student, by using the rating scale for both singles and doubles play. The post-evaluation will consist of the student playing both singles and doubles and demonstrating the following:

Level I--The student must achieve a 40% effectiveness on shot choice for both singles and doubles play, and demonstrate proper execution of both up-and-back and side-by-side doubles coverages.

Level II--The student must achieve a 50% effectiveness on shot choice for both singles and doubles play, and demonstrate proper execution of up-and-back, side-by-side, and a modified rotational court coverages.

Level III--The student must achieve a 60% effectiveness on shot choice for both singles and doubles play, and demonstrate proper execution of up-and-back, side-by-side, and rotational court coverages.

REMEDIATION: If the student does not successfully complete the post-assessment, a program will be recommended by the instructor, after consultation with the student.

APPENDIX I
SHORT SERVE FOR DOUBLES AND RECEIVING
SHORT SERVE FOR DOUBLES

THE SERVES IN BADMINTON

There are six different types of serves used when playing badminton: (1) the low short serve; (2) the high deep serve; (3) the low deep serve; (4) the driven serve; (5) the flick serve, and (6) the backhand serve. Each serve will be presented together in this module.

Because of the unusualness of the backhand serve, it will be considered last. Serves 1-5 above are all determined by the author to be forehand and require the forehand grip.

The serve is an underhand stroke which provides the means for scoring points. Legally the serve may be either forehand or backhand, although forehand is the most common. Because it is hit in an upward motion, it is considered to be defensive rather than offensive. A point can only be earned by the serving side.

There are certain rules which pertain to any serve the player chooses. If any one of these rules is violated, a fault occurs. The rules are separated into two categories: (1) server, and (2) receiver. If the server commits a fault he/she immediately loses his/her serve. If the receiver commits a fault, a point is automatically awarded to the serving side. All badminton players should become familiar with these rules and the penalty which occurs.

The short serve is almost exclusively used in doubles play, but it is used occasionally in singles as a change of pace serve. It is also used in singles to surprise the receiver when he/she over-compensates his/her court position in anticipation of a probable long serve.

The flight trajectory of the shuttle should be flat (see Figure 5, p. 187). The shuttle should barely clear the net, start a downward flight pattern after it crosses the top of the net, and land on or very close to the service line.

For purposes of deception, the preliminary movements for a long and short serve should look alike to the receiver. If there is a noticeable difference in beginning movements, the receiver will probably notice them and be able to correctly anticipate the type of serve to be delivered, thereby decreasing the effectiveness of the serve.

Two good placement areas for the short serve are: (1) at the junction of the service line and the center line, and (2) in the alley of the receiving court. Both of these areas of the court draw the receiver out of his/her center court position and opens a possible clear area for the servers' second shot. The inside corner, number one stated above, is the easiest placement area for the server to hit because the shuttle does not have as great a distance to travel.

When executing the short or low serve, the forearm and racket head should remain cocked throughout the entire swing.

At the conclusion of the stroke the racket should be pointed at the net top instead of high in the air.

Starting Position Server. The following description is applicable for all serves when you are initially learning to serve. As your skill level progresses you may discover that the position changes depending upon the serve and the angle of the shuttle as it enters the receiving court.

1. Hold the racket with the forehand grip.
2. Stand between 2-4 inches behind the service line, and 2-4 inches to the side of the center line, in your respective court. See Figure 11, p. .

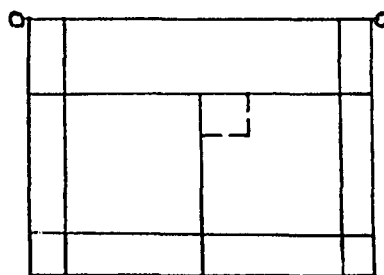


Figure 11. Serving Position

3. Place your feet in a forward-backward stride, with the opposite foot from the racket hand being forward.
4. Assume a comfortable distance between the feet. A good distance for you may 12-18 inches. Experiment to discover your most advantageous feet distance.
5. Point the toes of the forward foot in the direction of the receiving court.
6. Hold the shuttle with the thumb and the index finger so that the base of the shuttle is pointing downward.
 - A. The shuttle must be held with the non-racket hand.
 - B. The shuttle may be held at the top part (the feathered section), or around the band which separates the base from the feathers.
7. Experiment with holding the shuttle to see which you prefer

8. Assume the forward-backward stride mentioned above, and center the body weight equally over both feet. Rock the weight backward and then forward then back to the center position.

After you have successfully completed 1-8 above you are ready to enter the module. Do not begin the module until you feel confident that your serving position has been determined.

PREREQUISITES: Serving position criterion should have been met prior to beginning work in the module. If you have not done so, complete steps 1-8 above.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: There is no pre-assessment to enter Level I. If the learner wishes to enter the module at one of the higher levels, he/she must demonstrate competency in the requirements stated in the preceding level(s). In order to determine competency level, the learner may ask the instructor for a subjective pre-assessment prior to beginning any level.

LEVEL OBJECTIVES:

IF AFTER THREE SETS OF FIVE UNSUCCESSFUL ATTEMPTS AT FULFILLING AN OBJECTIVE, DO NOT CONTINUE, INSTEAD GO TO THE SUGGESTED LEARNING ALTERNATIVES. IF A LEARNING ALTERNATIVE IS NOT STATED, GO TO THE INSTRUCTOR FOR ASSISTANCE.

Level I. Objectives

1. The student will, when asked by a classmate or instructor, state orally the rules which pertain to serving in badminton. REREAD SERVING RULES.
2. The student will, when asked by a classmate or instructor, state orally the rules which pertain to receiving the serve in badminton. REREAD SERVING AND RECEIVING RULES.
3. The student will demonstrate the correct serving position of the feet when serving. EXIT FROM LEVEL OBJECTIVES, RETURN TO SERVING POSITION.

4. The student will assume a correct serving position, release the shuttle from the non-racket hand, and contact the shuttle with the racket 10 consecutive times. LEARNING ALTERNATIVES 5-A.
5. The student will, using a legal serve, serve the shuttle over the net 6 out of 10 times. LEARNING ALTERNATIVE 5-A.
6. The student will serve 5 consecutive legal serves to the right receiving court. LEARNING ALTERNATIVE 5-A.
7. The student will serve 5 consecutive legal serves to the left receiving court. LEARNING ALTERNATIVE 5-A.
8. The student will serve 3 out of 5 legal serves, between a rope 18 inches from the top of the net and the net top, into the right doubles receiving court, with the shuttle landing between the service line and a line 2 feet behind the service line.
9. The student will serve 3 out of 5 legal serves, between a rope 18 inches from the top of the net and the net top, into the left doubles receiving court, with the shuttle landing between the service line and a line 2 feet behind the service line.
10. The student will assume a legal serving position in the right service court alley, and serve 5 serves to the right receiving court.
11. The student will assume a legal serving position in the left service court alley, and serve 5 serves to the left receiving court.

Level I. RECEIVING OBJECTIVES

1. The student will return 5 short serves from the right court, by hitting the shuttle so that it crosses the net and falls between the net and the short service line on the servers' side of the net.
2. The student will return 5 short serves from the left court, by hitting the shuttle so that it crosses the net and falls between the net and the short service line on the servers' side of the net.

3. The student will return 5 short serves from the right court by hitting the shuttle so that it crosses the net and falls between the net and the short service line in the opponents' left court.
4. The student will return 5 short serves from the left court by hitting the shuttle so that it crosses the net and falls between the net and the short service line in the opponent's right court.

Level II. OBJECTIVES

1. The student will serve 3 out of 5 legal serves that pass between a rope 12 inches from the net top and the net top, and land into the boundaries of the right receiving court. LEARNING ALTERNATIVE--LEVEL I, OBJECTIVE 8.
2. The student will serve 3 out of 5 legal serves that pass between a rope 12 inches from the net top and the net top, and land into the boundaries of the left receiving court. LEARNING ALTERNATIVE--LEVEL I, OBJECTIVE 9.
3. The student will serve 3 out of 5 serves between a rope tied 12 inches above the net top and the net top, into the boundaries of the right receiving court, with the shuttle landing in Placement Area 2. (See Figure 8.) LEARNING ALTERNATIVES--LEVEL I, OBJECTIVE 8, AND LEARNING ALTERNATIVE 5-D.
4. The student will serve 3 out of 5 serves between a rope tied 12 inches above the net top and the net top into the boundaries of the right receiving court, with the shuttle landing in Placement Area 3. (See Figure 8.) LEARNING ALTERNATIVE--LEVEL I, OBJECTIVE 8, AND LEARNING ALTERNATIVE 5-D.
5. The student will serve 3 out of 5 serves between a rope tied 12 inches above the net top and the net top, into the boundaries of the left receiving court, with the shuttle landing in Placement Area 4. (See Figure 12, p. 108.) LEARNING ALTERNATIVES--LEVEL I, OBJECTIVE 9, AND LEARNING ALTERNATIVE 5-E.
6. The student will serve 3 out of 5 serves between a rope tied 12 inches above the net top and the net top into the boundaries of the left receiving court, with the shuttle landing in Placement Area 5. (See Figure 12, p. 108.) LEARNING ALTERNATIVES--LEVEL I, OBJECTIVE 9, AND LEARNING ALTERNATIVE 5-E.

7. The student will serve 3 out of 5 serves between a rope tied 12 inches above the net top and the net top into the boundaries of the right receiving court, with the shuttle landing in Placement Area 1. (See Figure 12, p. 218).
8. The student will serve 3 out of 5 serves between a rope tied 12 inches above the net top and the net top into the boundaries of the left receiving court, with the shuttle landing in Placement Area 6. (See Figure 12, p.218).
- *9. The student will serve 5 consecutive legal serves to the right receiving court, move to a net position following the completion of the serve, and attempt to return the receiver's return of service.
- *10. The student will serve 5 consecutive legal serves to the left receiving court, move to a net position following the completion of the serve, and attempt to return the receiver's return of service.

*These objectives must be fulfilled with a partner. The serves stated in both objectives must fall within the boundaries of the receiving court. A serve which does not fall, or would not fall if not contacted, within these boundaries is considered an unsuccessful attempt.

If the serve is good and the receiver fails to return it, then it is recorded as an unsuccessful attempt by the receiver, not the server. However, the server must successfully complete another return, but it may require more serves than 5 into one court.

Level II. RECEIVING OBJECTIVES

1. The student will legally return 5 serves from the right receiving court, with the shuttle passing over the net top and staying within the outer court boundaries.
2. The student will legally return 5 serves from the left receiving court, with the shuttle passing over the net top and staying within the outer court boundaries.
3. The student will legally return 3 out of 5 serves from the right receiving court, with the shuttle passing between a rope tied 12 inches above the net top and the net top, and landing between the net and the service line on the servers' side of the court.

4. The student will legally return 3 out of 5 serves from the left receiving court, with the shuttle passing between a rope tied 12 inches above the net top and the top of the net, and landing between the net and the service line on the servers' side of the court.
- *5. The student will return 5 serves from the right receiving court, with the shuttle landing between the net and the service line on the server's side of the net. Each return of serve should be varied as to area placement. (This objective and serving objective 9 should be completed together.)
- *6. The student will return 5 serves from the left receiving court, with the shuttle landing between the net and the service line on the server's side of the net. Each return of service should be varied as to area placement. (This objective and serving objective 10 should be completed together.)

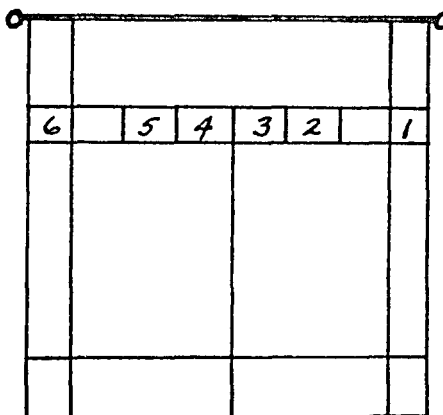


Figure 12. Serving Placement Area

Level III. OBJECTIVES

1. The student will serve 5 legal serves into the boundaries of the right doubles receiving court, with the shuttle passing between a rope tied 10 inches above the net top and the net top. LEARNING ALTERNATIVE--LEVEL II, OBJECTIVE 1.
2. The student will serve 5 legal serves into the boundaries of the left doubles receiving court, with the shuttle passing between a rope tied 10 inches above the net top and the net top. LEARNING ALTERNATIVE--LEVEL II, OBJECTIVE 1.

3. The student will serve 3 out of 5 legal serves into the right receiving court, with the shuttle passing between a rope tied 10 inches above the net top and the net top, and landing in Placement Area 1.
4. The student will serve 3 out of 5 legal serves into the right receiving court, with the shuttle passing between a rope tied 10 inches above the net top and the net top, and landing in Placement Area 3.
5. The student will serve 3 out of 5 legal serves into the left receiving court, with the shuttle passing between a rope tied 10 inches above the net top and the net top, and landing in Placement Area 4.
6. The student will serve 3 out of 5 legal serves into the left receiving court, with the shuttle passing between a rope tied 10 inches above the net top and the net top, and landing in Placement Area 6.
- *7. The student will serve 5 consecutive legal serves to the right receiving court, varying the placement of each serve, dependent upon the receivers' court position, and following each serve move to a net position and attempt to return the receiver's return of service. LEARNING ALTERNATIVE--READ STRATEGY MODULE.
- *8. The student will serve 5 consecutive serves to the left receiving court, varying the placement of each serve, dependent upon the receiver's court position, and following each serve move to a net position and attempt to return the receiver's return of service.

Level III. RECEIVING OBJECTIVES

1. The student will return 5 serves from the right receiving court by hitting the shuttle in such a way that it goes over the server's head and lands in the back alley in the server's court.
2. The student will return 5 serves from the left receiving court by hitting the shuttle in such a way that it goes over the server's head and lands in the back alley in the server's court.
3. The student will return 3 out of 5 serves from the right receiving court with the shuttle passing between a rope tied 10 inches above the net top and the net top, and landing between the net and the service line.

4. The student will return 5 serves from the left receiving court with the shuttle passing between a rope tied 10 inches above the net top and the net top, and landing between the net and the service line.
- *5. The student will return 5 serves from the right receiving court with the return varying in placement, but landing between the net and the service line on the server's side of the net, and following each return of service, move to a net position and attempt a return of the server's second shot. (This should be completed with serving objective number 7.)
- *6. The student will return 5 serves from the left receiving court with the return varying in placement, but landing between the net and the service line on the server's side of the net, and following each return of service, move to a net position and attempt a return of the server's second shot. (This should be completed with serving objective number 8.)

IF YOU HAVE SUCCESSFULLY COMPLETED ALL OF THE OBJECTIVES, GO TO THE INSTRUCTOR AND REQUEST A POST-ASSESSMENT. IF YOU FAILED TO COMPLETE ANY OF THE STATED OBJECTIVES, EITHER GO BACK TO LEVEL II, OR ASK ASSISTANCE FROM THE INSTRUCTOR.

INSTRUCTIONAL ACTIVITIES: The student may select from any or all of the following suggested resources. It is not mandatory, however, that the student refer to only the following resources. The instructor may refer the student to one or several of the sources as learning alternatives or remediation assistance.

1. Attend the teaching session conducted by the instructor. (See attached schedule.)
2. Ask a classmate for assistance.
3. Review the short serve loop film.
4. Read pages 101-105 in INDIVIDUAL SPORTS by Hale.
5. Read pages 21-22 in TEACHING INDIVIDUAL AND TEAM SPORTS by DeWitt and Dugan.
6. Read pages 30-32 in BADMINTON by Johnson.
7. Read pages 23-25 in BADMINTON by Poole.

8. Read pages 11-12 in BADMINTON by the Athletic Institute.
9. Refer to the Instructional Charts posted on the wall.
10. Ask the instructor for individual assistance.

POST-ASSESSMENT: The student will mark his/her progress throughout the completion of the module objectives. When the student has successfully completed the objectives, he/she should come to the instructor and request a post-evaluation. The instructor will select the level objectives to be demonstrated by the student.

REMEDIATION: If the student does not successfully complete the level objectives, or the post-assessment, he/she should consult with the instructor. The instructor will recommend a program to assist the student to overcome his/her deficiencies or weaknesses.

LEARNING ALTERNATIVES

- 5 A The coordination and timing of releasing the shuttle and swinging the racket forward is often times difficult for a person beginning to play.

Perhaps the most common error is swinging too soon. The racket forward swing should be slower for a short serve, and faster for a long serve.

Do each of the following until you can consistently contact the shuttle.

1. Count to yourself the rhythm of 1-2-3; 1-2-3.
2. Keep the same rhythmical count and swing the racket forward as you say 1-2-3. In order to do this, start the racket behind the body, then begin the racket forward swing on count 1, on count 2 the racket should be in the contact position, and on count 3 continue the racket moving to the follow-through position.

Repeat this sequence 10 times.

3. Count to yourself the rhythm of 1-2; 1-2.

4. Keep the 1-2 rhythmical count, and swing the racket forward as you say 1-2. Repeat this sequence 10 times.
5. Keep the 1-2 rhythmical count, and only swing the racket forward as you say 2. Repeat this sequence 5 times.
6. Hold the shuttle in the opposite hand, or your non-racket hand. Lay the racket on the floor in front of you. Say the 1-2 rhythmical count 5 times to yourself. Be sure the count is even and consistent.
7. Drop the shuttle on count 1, and on count 2 move your racket hand forward as if you were going to contact the shuttle. Do not have the racket in your hand, only move your racket hand. Repeat this sequence 10 times.
8. Working with both the racket and the shuttle. Start the racket in the back position behind the body. Before you begin, repeat the 1-2 rhythmical count to yourself. Release the shuttle on count 1, swing the racket forward on count 2. Contact the racket to the shuttle. Repeat until you have successfully completed the objective 10 times. The racket and shuttle must contact. A swing and a miss is an unsuccessful attempt.

AFTER THREE SETS OF 10 TRIALS EACH YOU HAVE NOT SUCCESSFULLY COMPLETED OBJECTIVE 8, DO NOT CONTINUE, INSTEAD GO TO LEARNING ALTERNATIVE 5 B. IF YOU WERE SUCCESSFUL IN COMPLETING OBJECTIVE 8, GO TO OBJECTIVE NUMBER 9.

9. Following the same directions as in objective 8, but you must contact the shuttle 10 consecutive times.

IF YOU HAVE SUCCESSFULLY COMPLETED ALL OF 5 A; 1-9, GO BACK TO LEVEL OBJECTIVES AND BEGIN WITH THE OBJECTIVE WHERE YOU EXITED. IF YOU DID NOT COMPLETE OBJECTIVES 8 OR 9, DO NOT RETURN TO LEVEL OBJECTIVES, INSTEAD GO TO LEARNING ALTERNATIVE 5 B.

- 5 B The distance the racket travels is often times a source of difficulty for the beginner.

Do each of the following objectives in the order that they are written. Follow all the directions stated in the objectives.

1. Hold the racket at the side of your body. Assume your serving feet position. Count the rhythmical count of 1-2; 1-2 10 times to yourself, making sure all 10 are identical in the rhythmical sequence.
2. Assume the above stated position. Repeat the 1-2 rhythmical count, and swing the racket forward on count 2. There will be no backswing, so start the racket from the side of your body. The count 2 forward swing will move the racket to the contact point and the follow-through position.

Repeat this sequence 10 times, or for 10 trials.
LEARNING ALTERNATIVE 5 A; Objectives 6-9.

3. Hold the shuttle in your non-racket hand. Drop the shuttle on count 1. Repeat this for 10 times.

Watch the shuttle hit the floor. The shuttle should land slightly ahead (6-8 inches) and to the right of the forward foot, if you are right handed, and 6-8 inches ahead and to the left of the forward foot if you are left handed.

4. Combine the releasing of the shuttle with the swing of the racket in objective number 1 above. Release the shuttle on count 1, swing the racket forward on count 2. Be sure the starting position of the racket is next to or to the side of the body.

Contact the racket to the shuttle. Repeat for 10 trials. You must contact the racket to the shuttle 10 times.

IF YOU HAVE SUCCESSFULLY COMPLETED THE ABOVE OBJECTIVES, CONTINUE TO OBJECTIVES 5-6 BELOW. IF YOU WERE NOT SUCCESSFUL, DO NOT CONTINUE BUT GO DIRECTLY TO LEARNING ALTERNATIVE 5 C.

5. Increase the length of the backswing so that the racket is 6 inches behind the hip of the back foot. Repeat the directions stated in objective number 4 above.
6. Increase the backswing so that the racket is 10-12 inches behind the hip of the back foot. Repeat the directions stated in objective number 4 above.

IF YOU HAVE SUCCESSFULLY COMPLETED OBJECTIVE 1-6, RETURN TO LEVEL OBJECTIVES AND BEGIN WHERE YOU EXITED.

IF YOU DID NOT COMPLETE OBJECTIVES 5-6, DO NOT RETURN TO THE LEVEL OBJECTIVES, INSTEAD GO TO LEARNING ALTERNATIVE 5 C.

- 5 C The long length of the lever is often times the source of the difficulty in contacting the racket to the shuttle. By shortening the length of the lever you lessen the distance, thereby lessening the possibility for errors.

Do each of the following objectives in the order in which they are stated. Follow all directions. Do not go back to the Level Objectives until you are told to do so.

1. Hold the racket at the top part of the grip rather than at the butt end of the handle. Say the 1-2 rhythmical count 10 times to yourself. Hold the racket at the side of your body, and as you say count 2, swing the racket forward as if you were hitting the shuttle.
2. Hold the shuttle in your non-racket hand. Release the shuttle on count 1, and swing the racket forward to contact the shuttle on count 2. Repeat this procedure until you have contacted the racket to the shuttle 10 times. LEARNING ALTERNATIVE 5 B; OBJECTIVE 2.
3. Increase the length of your backswing to 6 inches behind the hip of the back foot, and repeat the directions in objective 2 above. LEARNING ALTERNATIVE 5 B; OBJECTIVE 5.
4. Increase the length of your backswing to 12 inches behind the hip of the back foot, and repeat the directions in objective number 2 above. LEARNING ALTERNATIVE 5 B; OBJECTIVE 6.
5. Keep the same backswing as in objective 4 above, and contact the racket to the shuttle 5 consecutive times.
6. Keeping the same backswing, serve 5 legal serves to the right court. The shuttle must go over the net and land within the boundaries of the right receiving court.
7. Keep the same backswing as in number 6 above and serve 5 legal serves to the left receiving court. The shuttle must pass over the net and land within the left court receiving boundaries.

IF YOU HAVE SUCCESSFULLY COMPLETED OBJECTIVES 1-7 ABOVE, CONTINUE TO OBJECTIVES 8-11 BELOW. IF YOU WERE UNSUCCESSFUL AT OBJECTIVES 6-7 ABOVE, DO NOT CONTINUE, INSTEAD GO TO LEARNING ALTERNATIVE 5 D.

8. Keep the same backswing as in number 7 above, and move the hand so that its position is halfway between the butt end of the racket and the top part of the grip. Contact the shuttle with the racket 10 times.
9. Move the hand on the racket to the butt end of the handle and contact the shuttle with the racket 10 times.
10. Keep the same backswing as in objective number 4 and the same grip on the racket as in objective 9 and serve 5 legal serves to the right receiving court. The shuttle must pass over the net and land within the receiving court boundaries.
11. Keep the same backswing and serve 5 legal serves to the left receiving court. The shuttle must pass over the net and land within the receiving court boundaries. Be sure your grip is the same as in objective number 10.

IF YOU SUCCESSFULLY COMPLETED ALL OF THE OBJECTIVES STATED IN 5 C, RETURN TO LEVEL OBJECTIVES AND BEGIN WORKING WHERE YOU EXITED. IF YOU WERE UNSUCCESSFUL IN COMPLETING OBJECTIVES 8-11, DO NOT RETURN TO LEVEL OBJECTIVES, INSTEAD GO TO LEARNING ALTERNATIVE 5 D.

5 D The length of the lever still may be too long thereby impeding your success. The next set of objectives shortens the lever more than in 5 C, and hopefully will assist you in being successful in contacting the racket to the shuttle.

Do each of the objectives in order. Follow all directions.

1. Hold the racket at the shaft rather than on the grip. Hold the racket at the side of your body and swing it forward to the contact point, then return it to its starting position. Repeat this sequence 5 times.
2. Return to Learning Alternative 5 C, and complete objectives 2-7.

3. If after you attempt objectives 2-7 you are still unsuccessful, do not continue, go directly to the instructor and ask for assistance.
4. If you successfully completed 5 C; Objectives 2-7, return to 5 C and follow all directions.

*NOTE: RENUMBERING OF OBJECTIVES: Several of the Level II serving objectives were omitted, consequently some of the numbers, for analysis purposes, were reordered.

The following changes were made: Objectives 5, 6, 7, and 8 were omitted. Objective 9 became objective 5, and objective 10 became objective 6.

APPENDIX J
SHORT SERVE FOR SINGLES AND RECEIVING
SHORT SERVE FOR SINGLES

The short serve for singles is executed in the same manner as the short serve for doubles. The serving position for singles may be back farther in the serving court than what was stated in the preceeding module for the short serve in doubles. The serving court boundaries for singles are different than the court boundaries for doubles. The serving court for singles is often times referred to as long and narrow, while the doubles court is short and wide. Because of this difference in the serving and receiving court boundaries, the receiving position for singles is farther back in the receiving court than was stated for doubles.

Deception of the serve is extremely important in both singles and doubles. The backswing in all serves should be consistent so that the type of serve is disguised and is a complete surprise to the opponent(s). If the backswing for the serves is not consistent, then the opponent(s) can anticipate the type of serve that is to be delivered, based upon the server's backswing.

PREREQUISITES: Completion of all Level I objectives in the short serve module. Knowledge of the differences in the court boundaries between singles and doubles.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: There is no pre-assessment to enter the objectives unless requested by the instructor.

LEVEL OBJECTIVES: Since the short serve has been covered in depth in the doubles short serve section, this section will be recorded as Complete or Incomplete, based upon the fulfillment of the level objectives.

Level Objectives.

1. The student will orally describe the differences between the serving and receiving court boundaries for singles and doubles, if asked by the instructor.
2. The student will assume a correct serving position for serving to the right singles receiving court.
3. The student will assume a correct serving position for serving to the left singles receiving court.
4. The student will serve 5 legal serves into the right singles receiving court. LEARNING ALTERNATIVE SHORT SERVE FOR DOUBLES, LEVEL I, OBJECTIVE 6.
5. The student will serve 5 legal serves into the left singles receiving court. LEARNING ALTERNATIVE: SHORT SERVE FOR DOUBLES, LEVEL I, OBJECTIVE 7.
6. The student will serve 5 consecutive singles short serves into the right receiving court.
7. The student will serve 5 consecutive singles short serves into the left receiving court.

Receiving Objectives

1. The student will assume a correct receiving position for singles.
2. The student will return 5 singles short serves from the right receiving court by hitting the shuttle below the waist, and having the shuttle pass over the head of the server and land in the back third of the server's court.
3. The student will return 5 singles short serves from the left receiving court by hitting the shuttle below the waist, and having the shuttle fall between the net and the short service line on the server's side of the net.

INSTRUCTIONAL ACTIVITIES:

1. Attend the teaching session conducted by the instructor. See attached teaching schedule.
2. Read the rules of play in the NAGWS RULE GUIDE.
3. Read the rules of play in BADMINTON by Johnson.
4. Read the rules of play in BADMINTON by the Athletic Institute.
5. Ask the instructor for individual assistance.
6. Refer to the instructional activities in the doubles short serve section.
7. Read the rules of play in BADMINTON by Poole.
8. Ask a classmate to observe you and offer corrective suggestions.

POST-ASSESSMENT: When you have completed all of the level objectives, come to the instructor and request a post-evaluation. The instructor may ask you to demonstrate all or several of the objectives.

REMEDIATION: If the student fails to complete the level objectives, he/she should return to the doubles short serve section and review the stated learning alternatives. The instructor will suggest a corrective program to the student to assist in overcoming his/her weaknesses and/or deficiencies.

APPENDIX K
LONG SERVE FOR SINGLES AND RECEIVING
LONG SERVE FOR SINGLES

The long, high, deep serve is predominantly used for singles play, but is sometimes, with slight modifications, used in doubles. One of the advantages of using this high serve in singles is that it forces your opponent to the very back of his/her court and he/she must return the serve with a good shot in order to remain on the offensive. Another point than can be an advantage to the server, and at the same time a disadvantage to the receiver, is that if the receiver, following return of service, does not follow the shot back to his/her ready position in the court, he/she is very vulnerable for a well placed drop shot, or a shot that barely clears the net top and falls to the court surface close to the net. One of the reasons the high serve is not used, to any great degree, in doubles is because of the shorter service court, and also because of the partner being able to cover a drop shot.

In order to effectively execute the high, deep serve, the server must coordinate the swing of the racket, the releasing of the shuttle, and the body movement required. A well hit long serve will have a diagonally upward trajectory, peaking as high as 20-25 feet over the back of the court, and falling within inches of the back boundary line. Besides the height factor inherent in the serve, the player should

also be able to place the shuttle into the corners of the receiving court. By being able to not only serve high and deep, but also place the serve close to the side court boundary lines, the receiver is drawn out of position, and requires that he/she be able to not only return with a good shot, but also that he/she quickly return to the center of the court following the return.

The receiving court position for singles should be slightly farther back than center. The server's court position for the serve is dependent upon each individual server.

The angle and the placement of the serve is extremely important. The server can sometimes anticipate the direction of the service return by strategically placing the serve into certain court areas. This fact has not been mentioned prior to this, so each student should carefully review the placement strategies.

Change of direction in the return of service is extremely important. Do not acquire the habit of continually serving to one spot on the court, or continually returning the service with the same type of shot, or into the same court area. By continually changing the type of shot and the area for return, the server will not be able to anticipate the type of shot and/or the probable placement area for return of service; consequently, your shots will be more effective.

The backhand shots, for most players, are the weakest shots. This should give you a good placement area for serves. The one disadvantage to serving to the backhand is that because of the height of the serve the receiver is often times able to do an round-the-head shot.

Before you begin play against an opponent you should check to see whether he/she is left or right handed. If your opponent is left handed then your strategy will have to be reversed, otherwise you will continually be playing into the forehand, or the strength side.

PREREQUISITES: Knowledge of serving and receiving boundaries for singles. Knowledge of serving and receiving rules.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: There is no pre-assessment to enter Level I of this section. If the learner wishes to enter the section at one of the higher levels, he/she must demonstrate competency to the instructor in the requirements stated in the preceding sections. In order to determine competency level, the learner may ask the instructor for a subjective pre-assessment of skill and knowledge prior to entering the section at any level.

LEVEL OBJECTIVES:

Level I. OBJECTIVES

1. The student will, when asked by a classmate or the instructor, state orally the rules which pertain to serving in badminton.
2. The student will, when asked by the instructor, describe orally the legal serving court boundaries for singles. LEARNING ALTERNATIVE: READ PLAYING COURT IN MODULE 1.

3. The student will orally describe, when asked by the instructor, the reasons why height and depth are necessary and advantageous for the singles long serve.
4. The student will assume a correct serving position for serving to the right singles receiving court.
5. The student will assume a correct serving position for serving to the left singles receiving court.
6. The student will serve 5 legal singles long serves to the right receiving court, with the shuttle landing within 3 1/2 feet from the back boundary line. LEARNING ALTERNATIVE 6 A.
7. The student will serve 5 legal singles long serves to the left receiving court, with the shuttle landing within 3 1/2 feet from the back boundary line. LEARNING ALTERNATIVE 6 A.
8. The student will serve 3 out of 5 legal singles long serves to the right receiving court, with the shuttle passing over a rope 14 feet above the court surface, and landing within 3 1/2 feet from the back boundary line. LEARNING ALTERNATIVE 6 B.
9. The student will serve 3 out of 5 legal singles long serves to the left receiving court, with the shuttle passing over a rope 14 feet above the court surface, and landing within 3 1/2 feet from the back boundary line. LEARNING ALTERNATIVE 6 B.

Level I. RECEIVING OBJECTIVES

1. The student will assume a correct receiving position for singles in the right receiving court. REREAD SECTION INTRODUCTION.
2. The student will assume a correct receiving position for singles in the left receiving court.
3. The student will orally state the differences in the receiving position for singles and for doubles, when asked by the instructor.
4. The student will return 3 long serves from the right receiving court with each return of service going over the net and landing within the legal court boundaries.

5. The student will return 3 long serves from the left receiving court, with each return of service going over the net and landing within the legal court boundaries.

Level II. OBJECTIVES

1. The student will serve 3 out of 5 singles long serves to the right receiving court, with the shuttle passing over a rope 14 feet above the court surface, and landing within 3 feet of the back boundary line. LEARNING ALTERNATIVE 6 A.
2. The student will serve 3 out of 5 singles long serves to the left receiving court, with the shuttle passing over a rope 14 feet above the court surface, and landing within 3 feet of the back boundary line. LEARNING ALTERNATIVE 6 A.
3. The student will serve 5 legal singles long serves to the right receiving court, and following each serve move to the correct court position for play. LEARNING ALTERNATIVE 3 A.
4. The student will serve 5 legal singles long serves to the left receiving court, and following each serve move to the correct court position for play. LEARNING ALTERNATIVE 3 A.
- *5. The student will serve 5 legal singles long serves to the right receiving court marked A on the placement figure (see Figure 13, p.236), and following each serve move to the correct singles ready court position, and make a legal return of the receiver's return of service. LEARNING ALTERNATIVE 5 A.
- *6. The student will serve 5 legal singles long serves to the left receiving court marked B on the placement figure (see Figure 13, p.), and following each serve move to the correct singles ready court position, then make a legal return of the receiver's return of service. LEARNING ALTERNATIVE 5 A.
- *7. The student will serve 5 legal singles long serves to the right receiving court marked C on the placement figure (see Figure 13, p.), then following each serve, move to the correct singles ready position and make a legal return of the receiver's return of service. LEARNING ALTERNATIVE 7 A.

- *8. The student will serve 5 legal singles long serves to the left receiving court, marked D on the placement figure (see Figure 13, p.236), then following each serve move to the correct singles ready position and make a legal return of the receiver's return of service. LEARNING ALTERNATIVE 7 A.

*These objectives must be fulfilled with a partner. If the serve is good and the receiver fails to return it, then it is recorded as an unsuccessful attempt by the receiver, but as a successful attempt by the server.

Level II. RECEIVING OBJECTIVES

1. The student will return 5 singles long serves from the right receiving court, with the return of service landing within the legal boundaries of the server's court.
2. The student will return 5 singles long serves from the left receiving court, with the return of service landing within the legal boundaries of the server's court.
3. The student will return 5 legal singles long serves from the right receiving court, by contacting each shuttle above the head and hitting it so that it drops on the opponent's side of the net no farther than 6 feet 6 inches from the net (between the net and the short service line).
4. The student will return 5 legal singles long serves from the left receiving court by contacting the shuttle above the head and hitting it so that it drops on the server's side of the net and the short service line.
5. The student will assume a receiving position in the left receiving court, then return 5 singles long serves by contacting each shuttle above the head and hitting it past the server's midcourt, then following each return of service move to a center court ready position.
6. The student will assume a receiving position in the left receiving court, then return 5 singles long serves by contacting each shuttle above the head and hitting it past the server's midcourt, then following each return of service move to a center court ready position.

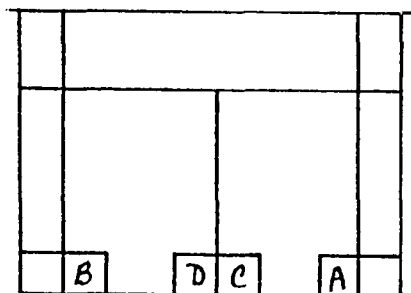


Figure 13. Serving Placement

Level III. OBJECTIVES

1. The student will serve 5 consecutive legal singles long serves to the right receiving court, with each serve passing over a rope 14 feet above the court surface, and landing within 2 1/2 feet of the back boundary line.
2. The student will serve 5 consecutive legal singles long serves to the left receiving court, with each serve passing over a rope 14 feet above the court surface, and landing within 2 1/2 feet of the back boundary line.
3. The student will serve 3 out of 5 singles long serves to placement area A (Figure 13, p.236), then following each serve move to an altered ready position of both feet in the center of his/her left court. LEARNING ALTERNATIVE 3 A.
4. The student will serve 3 out of 5 singles long serves to placement area C (Figure 13, p.236), then following each serve move to the proper ready playing position. LEARNING ALTERNATIVE 3 A.
5. The student will serve 3 out of 5 singles long serves to placement area B (Figure 13, p.236), then following each serve move to the proper ready court playing position. LEARNING ALTERNATIVE 3 A.
6. The student will serve 3 out of 5 singles long serves to placement area D (Figure 13, p.236), then following each serve move to the proper ready court playing position. LEARNING ALTERNATIVE 3 A.
- *7. The student will serve 5 singles long serves to the right receiving court, then following each serve move to the proper ready playing position and return the receiver's return of service with an appropriate shot, based upon the receiver's return of service and his/her court position.

- *8. The student will serve 5 singles long serves to the left receiving court, then following each serve move to the proper ready playing position and return the receiver's return of service with an appropriate shot, based upon the receiver's return of service and his/her court position.

Level III. RECEIVING OBJECTIVES

1. The student will return 5 singles long serves from the right receiving court, with each return landing in the server's right back alley.
2. The student will return 5 singles long serves from the left receiving court, with each return landing in the server's left court back alley.
3. The student will return 5 singles long serves from the right receiving court, with each return landing on the server's side of the net, on the left side of the court, between the net and the short service line.
4. The student will return 5 singles long serves from the left receiving court, with each return landing on the server's side of the net, on the right side of the court, between the net and the short service line.
5. The student will return 5 singles long serves from the right receiving court, then following each return move to a proper ready court playing position and attempt a return from the server, based upon the type of shot and the server's court position to place the server in a defensive position.
6. The student will return 5 singles long serves from the left receiving court, then following each return move to a proper ready playing position and attempt a return from the server, based upon the type of shot and the server's court position to place the server in a defensive position.

NOTE: Serving objectives 7, 8 and receiving objectives 5, 6 should be fulfilled together.

INSTRUCTIONAL ACTIVITIES:

1. Attend the teaching session conducted by the instructor. See attached teaching schedule.
2. Review the long serve loop film.
3. Refer to the instructional charts posted on the wall.
4. Ask the instructor for individual assistance.
5. Ask a classmate to observe you and offer corrective suggestions.
6. Read pages 107-111 in INDIVIDUAL SPORTS by Hale.
7. Read pages 21-24 in TEACHING INDIVIDUAL AND TEAM SPORTS by DeWitt and Dugan.
8. Read pages 47-49 in BADMINTON by Johnson.
9. Read pages 10-11 in BADMINTON by the Athletic Institute.
10. Read pages 19-22 in BADMINTON by Poole.

POST-ASSESSMENT: When the student has completed all the level objectives, he/she should come to the instructor and request a post-evaluation. The student should record his/her own progress throughout completion of the level objectives. Do not request a post-evaluation until you have completed all of the level objectives.

The completion recording of this section will be done by the instructor only. Do not advance to a higher level set of objectives until you have completed the post-assessment.

REMEDIATION: If when working through the objectives the student is unseccessful in completing the requirements stated, he/she should exit from the level objectives and enter the learning alternatives sections. If there is not a learning alternative stated, go directly to the instructor for assistance. The instructor will suggest a program or resources to assist the student in overcoming his/her deficiencies.

LEARNING ALTERNATIVES

- 6 A Depth is a necessary factor of an effective singles long serve. The flight of the shuttle should force the receiver out of his/her court position and, ideally, out of the court boundaries. The closer to the baseline the better the serve.

If your serve is not going deep enough into your opponent's court, complete the following objectives:

1. The student will assume a serving position in either the right or left court and practice the following sequence until he/she feels the sequence has been accomplished:
 - (1) release the shuttle before beginning the racket arm swing,
 - (2) swing through to contact point,
 - (3) continue the swing through the follow through making certain the racket finishes above shoulder level with the palm facing downward.
2. The student will mimetically demonstrate the above stroke pattern to a classmate.
3. The student will serve 10 shuttles into the receiver's court, either right or left court, with the shuttle landing within 3 1/2 feet from the back boundary line.

IF YOU SUCCESSFULLY COMPLETED OBJECTIVES 1-3 ABOVE, RETURN TO WHERE YOU EXITED AND BEGIN WITH THE APPROPRIATE OBJECTIVE. IF YOU WERE UNSUCCESSFUL, DO NOT RETURN TO LEVEL OBJECTIVES, INSTEAD EITHER GO TO LEARNING ALTERNATIVE 7 B OR TO THE INSTRUCTOR FOR ASSISTANCE.

- 6 B Height is an important factor of the singles long serve. If the shuttle is going deep enough into the receiver's court, but it is not going high enough to clear the rope, go directly to the objectives stated below:

1. The student will hold the shuttle in front of the body, and the racket in the beginning position, then drop the shuttle first and start the swing forward after the release. Repeat for 10 times.
2. The student will mimetically practice the following stroke pattern 10 times:

- (1) drop shuttle then start racket forward,
 - (2) shift the body weight from the back foot to center to the forward foot,
 - (3) move the racket to the follow through position and the weight shifts to the balls of both feet.
3. Mimetically practice, with the racket, the section of the stroke pattern just prior to and during the contact point and concentrate on speeding up the rotation of the forearm.
 4. The student will assume a serving position in the right or left court, start the preliminary swing, step forward with the non-racket foot as the shuttle is contacted and continue the racket to the follow-through position.
 5. The student will follow the directions stated in number 4 above, and from either the right or left court, serve 5 shuttles over the 14 foot rope into the proper receiving court.
 6. The student will follow all directions stated in number 5 above, except to assume a serving position in the opposite court and serve to the opposite receiving court.
 7. The student will, without stepping, serve from either the right or the left serving court, 5 shuttles over the 14 foot rope into the proper receiving court.
- 3 A This alternative is designed to assist the student in court positioning rather than stroke execution. If stroke execution is your difficulty, do not enter this section, instead go to learning alternatives 6 A and 6 B.

Court positioning is important in competitive play. Often times a player fails to win a rally, or even the game, because he/she cannot effectively execute the strokes, but also because he/she does not use proper court positioning techniques.

The following is a brief description of proper coverage techniques that should be utilized. Read each situation, then follow the directions stated at the conclusion.

1. The serve goes deep to opponent's forehand in the right court--

YOUR POSITION: assume a playing position half-way between the net and the baseline, one foot to the left of your center line, keeping your body in line with the flight trajectory of the shuttle. You should be in the middle of the angle of possible return shots.

By assuming this position you not only anticipate the angle of return, which most probably will be down-the-line from the hitter, but also you are decreasing the backhand area and increasing your forehand area.

2. The serve goes deep to opponent's backhand in the right court--

YOUR POSITION: assume a center court playing position, which will place your body in line with the flight of the shuttle.

3. The serve goes deep to opponent's forehand in the left court--

YOUR POSITION: assume a center court playing position, which will place your body in line with the flight of the shuttle.

4. The serve goes to opponent's backhand deep in his/her left court--

YOUR POSITION: assume a position half-way between the net and the baseline, one foot to the right of your center line. This position places you in the most strategic position to return the shot if goes down-the-line, and will also allow you to cover a cross court shot.

RETURN TO LEVEL OBJECTIVES AND BEGIN WORKING WHERE YOU EXITED.

- 5 A Review learning alternative 3 A. If you are also having difficulty with stroke execution, review learning alternatives 6 A and 6 B.

APPENDIX L

LONG SERVE FOR DOUBLES-MODULE 9
RECEIVING LONG SERVE FOR DOUBLES-MODULE 10

APPENDIX L
LONG SERVE FOR DOUBLES AND RECEIVING
LONG SERVE FOR DOUBLES

The long serve for doubles is executed in a similar manner as the long serve for singles. The height of the shuttle is lower in the doubles long serve than in the singles long serve, and because of the differences in serving court boundaries, the serve is not as deep, and may also be angled into the side alleys.

Deception, as to the type of serve to be delivered, and placement into the receiving court, is extremely important. The receiver should not be able to anticipate, by the server's beginning or preliminary motions, the type of serve to be delivered.

As was mentioned in an earlier section, the short serve is the predominant type of serve used in doubles, but the long serve can be an effective surprise attack. When the receiver anticipates a short serve, and crowds the service line, or stands too far forward in the receiving court, the long serve, placed over the receiver's head is the type of serve that should be delivered.

The serving position may differ slightly between singles and doubles. Some advanced players, when serving from their right court, to a right handed player, will stand in their right court alley, and deliver a long serve to the backhand side of the receiver. One advantage to standing in the alley

to serve is that the angle to the backhand side of the receiving court is increased. Another advantage of this type of serve is that it is, when properly executed, a difficult shot to return, partly because of the angle, but also because it appears to the receiver, until the last moment, that the serve is going to drop into the wrong court.

The long serve in doubles should be used sparingly, but most certainly used when appropriate. It should be a complete surprise to the receiver, and catch him/her off guard.

Players should always notice whether their opponents are right handed or left handed, or whether in some cases, players are able to play with either hand. For most players the backhand shots are weaker than the forehand. If this appears to be the case, then it probably means that long serves placed to the backhand are more effective than long serves to the forehand.

The type of court coverage used following the serve is dependent upon the type of serve delivered, and to some extent the strengths and weaknesses of the players. Both players on the serving and receiving teams should automatically move into the correct court coverage following the serve and return.

PREREQUISITES: Completion of all Level I objectives in the following sections: singles long serve, and doubles short serve. The student should have mastered a beginning serving and receiving position for doubles. The student should know the basics of up-and-back and side-by-side court coverages.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student.

LEVEL OBJECTIVES:

Level I. OBJECTIVES

1. The student will assume a correct serving position for serving to the right doubles receiving court.
2. The student will assume a correct serving position for serving to the left doubles receiving court.
3. The student will serve 5 legal doubles long serves into the right receiving court.
4. The student will serve 5 legal doubles long serves into the left receiving court.
- *5. The student will serve 5 consecutive legal doubles long serves into the right receiving court.
- *6. The student will serve 5 consecutive legal doubles long serves into the left receiving court.

Level I. RECEIVING OBJECTIVES

1. The student will assume a correct receiving position for returning a serve from the right receiving court. LEARNING ALTERNATIVE--REREAD INTRODUCTION TO THE SHORT SERVE FOR DOUBLES SECTION.
2. The student will assume a correct receiving position for returning a serve from the left receiving court.
- *3. The student will return 3 out of 5 doubles long serves from the right receiving court, with the shuttle passing over the net and staying within the legal playing court boundaries.
- *4. The student will return 3 out of 5 doubles long serves from the left receiving court, with the shuttle passing over the net and staying within the legal playing court boundaries.

*Must be fulfilled with a partner.

Level II. OBJECTIVES

1. The student will serve 3 out of 5 legal doubles long serves, with the shuttle passing over a rope 6 feet above and parallel to the net, to Placement Area A (see Figure 14, p.248). LEARNING ALTERNATIVE 1 A, 1 C.
2. The student will serve 3 out of 5 legal doubles long serves, with the shuttle passing over a rope 6 feet above and parallel to the net, to Placement Area B. LEARNING ALTERNATIVE 1 A, 1 C.
3. The student will serve 3 out of 5 legal doubles long serves, with the shuttle passing over a rope 6 feet above and parallel to the net, to Placement Area C (see Figure 14, p.248).
4. The student will serve 3 out of 5 legal doubles long serves, with the shuttle passing over a rope 6 feet above and parallel to the net, to Placement Area D (see Figure 14, p.248).
5. The student will serve 5 legal doubles long serves, standing in server position 1 (see Figure 14, p.248) to Placement Area A, then following each serve move to his/her right court area in a side-by-side court coverage position. LEARNING ALTERNATIVE--REVIEW BASICS STATED IN STRATEGY MODULE FOR SIDE-BY-SIDE COVERAGE.
- *6. The student will serve 5 doubles long serves, standing in server position 2 (see Figure 14, p.248) to Placement Area A, then following each serve move to his/her right court area in a side-by-side court coverage position.
- *7. The student will serve 5 legal doubles long serves, standing in server position 3 to Placement Area D (see Figure 14, p.248), then following each serve move to his/her left court area in a side-by-side court coverage position.
- *8. The student will serve 5 legal doubles long serves, standing in server position 4 to Placement Area C (see Figure 14, p.248), then following each serve move to his/her left court area in a side-by-side court coverage position.

Level II. RECEIVING OBJECTIVES

1. The student will return 3 doubles long serves from the right court, by hitting the shuttle in such a way that it lands on the opponent's side of the court, between the net and the service line.
2. The student will return 3 doubles long serves from the right court, by hitting the shuttle in such a way that it goes cross court and lands in the opponent's right court, between the service line and the net. LEARNING ALTERNATIVE--REVIEW CROSSCOURT LOOP FILMS.
3. The student will return 3 doubles long serves from the left court by contacting the shuttle above his/her head and hitting the shuttle so that it angles sharply downward on the opponent's side of the net.
4. The student will return 3 doubles long serves from the left court by contacting the shuttle above his/her head and hitting it so that it passes over the server's head and lands in the back third of the server's court.
5. The student will return 5 doubles long serves from the right court by hitting each shuttle in such a way that it falls between the service line and the net on the server's side of the court, then following each return move to side-by-side court coverage.
6. The student will return 5 doubles long serves from the left court, by contacting the shuttle in such a way that it lands in the server's back court, then following each return of service move to a side-by-side court coverage.

Level III. OBJECTIVES

1. The student will serve 3 out of 5 doubles long serves, standing in server position 1 (see Figure 14, p.248), to Placement Area A, with the shuttle passing over a rope extended 6 feet above the court surface. LEARNING ALTERNATIVE--LEVEL II, OBJECTIVE NUMBER 1.
2. The student will serve 3 out of 5 doubles long serves, standing in server position 2 to Placement Area A (see Figure 14, p.248), with the shuttle passing over a rope extended 6 feet above the court surface.

3. The student will serve 3 out of 5 doubles long serves, standing in server position 1 to Placement Area B (see Figure 14, p. 248), with the shuttle passing over a rope extended 6 feet above the court surface.
4. The student will serve 3 out of 5 doubles long serves, standing in server position 3 to Placement Area C (see Figure 14, p. 248) with the shuttle passing over a rope extended 6 feet above the court surface.
5. The student will serve 3 out of 5 doubles long serves, standing in server position 3 to Placement Area D (see Figure 14, p. 248) with the shuttle passing over a rope extended 6 feet above the court surface.
6. The student will serve 3 out of 5 doubles long serves, standing in server position 5 to Placement Area C (see Figure 14, p. 248), with the shuttle passing over a rope extended 6 feet above the court surface.
- *7. The student will serve 5 doubles long serves, varying the placement of each serve, to the right court, then following each serve, move to a side-by-side court coverage position and attempt to return the receiver's return of service.
- *8. The student will serve 5 doubles long serves, varying the placement of each serve, to the left court, then following each serve, move to a side-by-side court coverage position and attempt to return the receiver's return of service.

Level III. RECEIVING OBJECTIVES

1. The student will return 3 doubles long serves from the right court by contacting the shuttle above his/her head and hitting it in such a way that it passes over the head of the server and lands in his/her back court.
2. The student will return 3 doubles long serves from the right court by contacting the shuttle above his/her head and hitting it in such a way that it passes over the net and lands between the net and the service line on the server's side of the court.
3. The student will return 3 doubles long serves from the left court by contacting the shuttle above his/her head and hitting it in such a way that it passes over the head of the server and lands in his/her right back court.

4. The student will return 3 doubles long serves from the left court by contacting the shuttle above his/her head and hitting it in such a way that it passes over the net and lands between the net and the service line in the server's right court.
- *5. The student will return 5 doubles long serves from the right court, varying the placement of each return of service, then following each return, move to a side-by-side court coverage position and attempt a return of the server's second shot.
- *6. The student will return 5 doubles long serves from the left court, varying the placement of each return of service, then following each return, move to a side-by-side court coverage position and attempt a return of the server's second shot.

*Note--It is recommended that serving objectives 7 and 8 and receiving objectives 5 and 6 be fulfilled together.

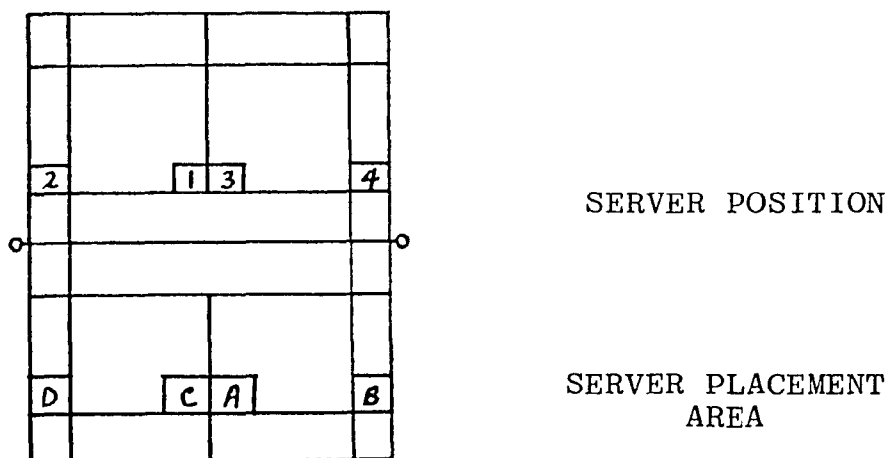


Figure 14. Serving Position and Placement

INSTRUCTIONAL ACTIVITIES

1. Attend the teaching session conducted by the instructor. (See attached teaching schedule.)
2. Review the doubles long serve loop film.
3. Read pages 101-111 in INDIVIDUAL SPORTS by Hale.
4. Read pages 81-83 in BADMINTON by Johnson.

5. Read pages 10-14 in BADMINTON by the Athletic Institute.
6. Refer to the Instructional Charts on the wall.
7. Ask the instructor for individual assistance.
8. Ask a classmate to observe you and offer corrective suggestions.

POST-ASSESSMENT: IF YOU HAVE SUCCESSFULLY COMPLETED ALL OF THE OBJECTIVES IN YOUR LEVEL, GO TO THE INSTRUCTOR AND ASK FOR A POST-ASSESSMENT. DO NOT CONTINUE TO THE NEXT SECTION UNTIL YOU HAVE COMPLETED THE POST-ASSESSMENT.

REMEDIATION: IF, WHEN WORKING THROUGH THE LEVEL OBJECTIVES, THE STUDENT HAS NOT COMPLETED THE OBJECTIVE AFTER 15 ATTEMPTS, THEN GO DIRECTLY TO THE STATED LEARNING ALTERNATIVE, IF ONE IS STATED. IF A LEARNING ALTERNATIVE IS NOT STATED, GO DIRECTLY TO THE INSTRUCTOR. DO NOT CONTINUE WORKING ON THE LEVEL OBJECTIVES.

If the student does not successfully complete the post-evaluation, a corrective program will be recommended by the instructor. When the student feels that his/her weaknesses and/or deficiencies have been overcome, he/she should request another post-assessment.

LEARNING ALTERNATIVES

- 1 B If the shuttle is not going deep enough into the receiver's court, then a slight increase in power may be necessary. Work through the following objectives in order, recording completion of each objective.
 - (1) The student will mimetically practice the stroke pattern and increase the speed of the arm just prior to contact and the action of the wrist during contact.
 - (2) The student will mimetically practice the stroke pattern, making certain the body weight transfers from the back foot, to a center position, to the front foot.
 - (3) The student will serve 5 serves into either court, with the shuttle landing 12 inches from the back service boundary line for doubles.

- 1 C If the shuttle goes both too high and too shallow, then the probable cause is the shuttle is being released too late, or perhaps hit too close to the body. Do the following objectives in order, recording the completion of each.
- (1) The student will mimetically practice the following 10 times--release the shuttle from the non-racket hand, then begin the arm swing forward.
 - (2) The student will practice the above combination with a racket and a shuttle.
 - (3) The student will assume a serving position in either the right or left court, then hold the shuttle 12 inches forward and 12 inches outward from the non-racket foot and complete the following:
count 1--release the shuttle
count 2--simulate racket starting forward and the pelvic girdle beginning to rotate.
 - (4) The student will complete the combination stated in objective 3 above, 5 times, but actually contact the shuttle with the racket.
 - (5) The student will serve 5 doubles long serves that go over a 6 foot rope tied parallel to the court surface, and land within 12 inches of the back service boundary for doubles.

IF YOU SUCCESSFULLY COMPLETED THE OBJECTIVES ABOVE, RE-ENTER THE LEVEL OBJECTIVES, BEGINNING WITH THE OBJECTIVE WHERE YOU EXITED. DO NOT RE-ENTER THE LEVEL OBJECTIVES UNTIL YOU HAVE COMPLETED 1-5 ABOVE.

APPENDIX M
MODIFIED SERVE GAME

The following modified game module is designed to assist the student in gaining additional practice time in serving and moving on the court during a competitive situation. The rules are a modification of the Official Rules of play and should be noted as such by the student. The module is designed as a pre-game experience to acquaint the student with scoring, striking the shuttle while moving on the court, and serving and receiving.

The post-assessment is recorded as Complete/Incomplete by the instructor, but the student records the game scores while completing the level objectives.

PREREQUISITES: The student must have completed at least all Level I objectives in all sections of Serves in Badminton Module.

ESTIMATED TIME: 5 minutes per game.

PRE-ASSESSMENT: None unless requested by the student.

LEVEL OBJECTIVES:

THE STUDENT MUST FULFILL THE OBJECTIVES STATED IN THE LEVEL FOR WHICH HE/SHE IS CONTRACTING FOR THE FINAL GRADE. IF YOU ARE CONTRACTING FOR A C, THEN YOU MUST DO LEVEL I; FOR A B, THEN YOU MUST DO LEVEL II; FOR AN A, YOU MUST DO LEVEL III.

Level I. OBJECTIVES

1. The student will use both the short serve for singles and the long serve for singles while competing in 3 different singles games.
2. The student will win 3 serve games by scoring 7 points.

Level II. OBJECTIVES

1. The student will use both the short serve for singles and the long serve for singles while competing in 4 different games.

2. The student will win 4 serve games by scoring 7 points in each game.

Level III. OBJECTIVES

1. The student will use both the short serve for singles and the long serve for singles while competing in 5 different singles games.
2. The student will win 5 serve games by scoring 7 points in each game.

INSTRUCTIONAL ACTIVITIES:

1. Ask the instructor for assistance.
2. Ask a classmate for assistance.
3. Request to review the AIAW National Badminton Final Singles Match.
4. Read sections in previously stated textbook on Singles Playing Strategy.

POST-ASSESSMENT: After the student has won the designated number of games, he/she comes to the instructor and requests a post-evaluation. The instructor may ask to see the student play an entire or part of a singles game.

REMEDIATION: If after playing 5 different people, the student fails to win a game, he/she should come to the instructor and ask for assistance. After consultation with the student the instructor will recommend a program to assist the student in correcting weaknesses and/or deficiencies.

If the student fails the post-evaluation, the instructor will recommend a suggested correctional program to the student. The student may continue into the next module before he/she completed the post-assessment, but he/she must still return to this module and complete the post-assessment by the instructor.

NOTE: In completing this module, you may play against opponents in your own level or one level above or below you. The opponents name and his/her level number must be recorded on your score sheet.

RECORD SHEET FOR MODIFIED SERVE GAME MODULE

NAME _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

NAME OF OPPONENT _____ DATE _____

OPPONENT'S LEVEL _____ GAME SCORE _____

WINNER _____

POST-ASSESSMENT _____

DATE COMPLETED _____ SIGNATURE _____

RECOMMENDATIONS _____

APPENDIX N

ADVANCED SERVES IN BADMINTON

The following sections are for those students contracting for either an A or a B. If you are contracting for a C then these are optional modules for you.

The following serves are for the more advanced player, and are more difficult to execute. The serves contained in Appendix D are considered to be the basic serves in badminton, and all players should master them in order to be a successful player.

If you are contracting for a B, then you must complete at least Level II Objectives in the Drive Serve section. If you are contracting for an A, you must complete at least Level II objectives for the Drive Serve, and all stated objectives for the Flick Serve and the Backhand Serve.

DRIVE SERVE AND RECEIVING DRIVE SERVE

The drive serve is used as a change of pace serve. It is also used when your opponent anticipates a short serve and overcompensates his/her receiving position too far forward in the court. The drive serve, in order to be effective, must be deceptive. When you notice that your opponent's body weight shifts forward in anticipation to rush the net, then the drive serve should be used to pass him/her in the court, but the opponents should not be able to notice a difference in your preliminary motions. The drive serve is used by more players in doubles than in singles, however, it can be very effective in either type of game. One of the most difficult serves to return is a well-placed drive serve that is hit directly at the body of the receiver.

The driven serve has a very low trajectory. The flight pattern for the serve should be no higher than the receiver's shoulders.

The beginning stages of execution of the drive serve and the short serve are similar, except the delivery of the drive serve is with much greater force. In executing both serves, the server's court position may be the same, and the beginning of the foreswing is identical.

One of the major differences between the short serve and the drive serve occurs just prior to and at the contact point. Just prior to the contact point, the elbow straightens

and at the contact point, the wrist which is partially uncocked, rapidly extends. This fast movement of the wrist accelerates the racket head and gives momentum to the shuttle. The contact point should be as high as possible, but still legal according to the Official Rules, in order to give the shuttle a flat trajectory. By contacting the shuttle as high as possible, and by straightening the arm just prior to contact, and by keeping the racket head tip pointing downward longer than in the short serve, a flatter arc is achieved.

Another difference between the short serve and the drive serve is in the follow-through. The follow-through for the short serve is the racket pointing at the net. Power nor height are needed for the short serve, therefore, the follow-through should be minimal. Because of the additional force needed in the drive serve, the follow-through is increased. After contacting the shuttle, the racket should continue moving across the body torso and end up over the opposite shoulder, with the racket pointed toward the back of the court.

When executing the drive serve, be extremely careful that the shuttle is contacted below the server's waist, and that the racket head is definitely pointed downward at the contact point. Until recently it was legal to serve with the racket head being almost parallel to the floor, providing the shuttle was contacted below the waist, and the

racket head was below the server's hand. Because of the difficulty of the Umpire to determine whether or not this type of serve was legal, the rule was changed to read that the racket must be pointed downward at the contact point. One of the biggest dangers, and a common error when executing this type of serve, is that the server contacts the shuttle too high, or that the racket head is raised to a parallel position prior to the contact.

PREREQUISITES: The student must have completed at least Level I objectives in the doubles short serve, doubles long serve, singles short serve, and singles long serve sections, and completed Appendix J.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student. If the student is contracting for an A, he/she must complete Level III objectives; if contracting for a B, the student may complete either Level II or Level III objectives.

LEVEL OBJECTIVES: IF AFTER 15 ATTEMPTS AT FULFILLING AN OBJECTIVE YOU HAVE NOT BEEN SUCCESSFUL, DO NOT CONTINUE, INSTEAD GO DIRECTLY TO THE LEARNING ALTERNATIVES, IF THERE IS ONE STATED, IF NOT, GO DIRECTLY TO THE INSTRUCTOR FOR ASSISTANCE.

BE CERTAIN THAT YOU RECORD ALL ATTEMPTS AT FULFILLING THE OBJECTIVE, WHETHER OR NOT YOU ARE SUCCESSFUL.

THE LEVEL I OBJECTIVES MAY BE RECOMMENDED BY THE INSTRUCTOR AS LEARNING ALTERNATIVES, HOWEVER, EACH STUDENT SHOULD READ THROUGH THE OBJECTIVES AND BE CERTAIN THAT HE/SHE CAN MASTER THE STATED COMPETENCIES.

Level I. OBJECTIVES

1. The student, when asked by the instructor, will orally describe the mechanics of executing a drive serve. LEARNING ALTERNATIVE--SEE RECOMMENDED SOURCES INCLUDED IN INSTRUCTIONAL ACTIVITIES.

2. The student will, if asked by the instructor, describe and analyze the mechanics of executing the drive serve, the uses and advantages of the drive serve, and its similarities and differences to the short serve. LEARNING ALTERNATIVE--REREAD INTRODUCTION TO DRIVE SERVE.
3. The student will serve 5 legal drive serves from the right serving court. LEARNING ALTERNATIVE 3 A.
4. The student will serve 5 legal drive serves from the left serving court. LEARNING ALTERNATIVE 3 A.
5. The student will be rated by the instructor, in an isolated situation, and score at least a 3 on a 5-point scale, on proper mechanics and placement while delivering drive serves to both the right and left courts.

Level II. OBJECTIVES

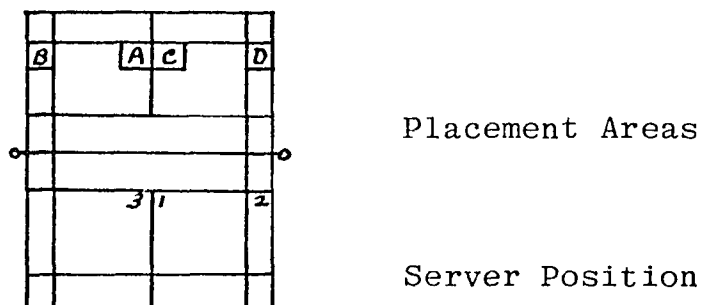


Figure 15.
Server Position and Placement Area for Drive Serve

1. The student will, when asked by the instructor, describe and analyze the mechanics, uses and advantageous placements of the drive serve, and explain the differences between executing the short serve and the drive serve. LEARNING ALTERNATIVES--REREAD INTRODUCTION.
2. The student will serve 3 out of 5 legal drive serves from Server Position 1 to Placement Area A. LEARNING ALTERNATIVE 2 A.
3. The student will serve 3 out of 5 legal drive serves from Server Position 2 to Placement Area A. LEARNING ALTERNATIVE 3 A.

4. The student will serve 3 out of 5 legal drive serves from Server Position 3 to Placement Area C. LEARNING ALTERNATIVE 2 A.
5. The student will serve 3 out of 5 legal drive serves from Server Position 3 to Placement Area D. LEARNING ALTERNATIVE 3 A.
- *6. The student will serve 5 legal driver serves from the right serving court, then following each serve move to a side-by-side doubles court coverage position.
- *7. The student will serve 5 legal drive serves from the left serving court, then following each serve move to a side-by-side doubles court coverage position.

Level II. RECEIVING OBJECTIVES

1. The student will return 3 drive serves that are served into Placement Area A, with the return staying within the legal court boundaries.
2. The student will return 3 drive serves that are served into Placement Area D, with the return staying within the legal court boundaries.
3. The student will return 5 drive serves from the right receiving court, with the return staying within the legal court boundaries, then following each return of serve move to a side-by-side doubles court coverage position.
4. The student will return 5 drive serves from the left receiving court, with the return staying within the legal court boundaries, then following each return of serve move to a side-by-side doubles court coverage position.

Level III. OBJECTIVES

1. The student will, when asked by the instructor, describe orally and analyze the mechanics, uses, and advantageous placements of the drive serve, and explain the similarities and differences between executing the short serve and the drive serve. LEARNING ALTERNATIVE--REREAD INTRODUCTION.

2. The student will serve 3 out of 5 legal drive serves from Server Position 1 to Placement Area A. LEARNING ALTERNATIVE 2 A.
3. The student will serve 3 out of 5 legal drive serves from Server Position 2 to Placement Area A. LEARNING ALTERNATIVE 3 A.
4. The student will serve 3 out of 5 legal drive serves from Server Position 3 to Placement Area C. LEARNING ALTERNATIVE 2 A.
5. The student will serve 3 out of 5 legal drive serves from Server Position 3 to Placement Area D. LEARNING ALTERNATIVE 3 A.
- *6. The student will serve from either right court Serving Positions, into either right court Area Placements, then following each serve, move to a side-by-side doubles court coverage position, and return the receiver's return of service with an advantageous shot. This sequence will be repeated 4 times to the right court.
- *7. The student will serve from either left court Serving Positions, into either left court Area Placements, then following each serve, move to a side-by-side doubles court coverage position, and return the receiver's return of service with an advantageous shot. This will be repeated 4 times to the left court.

Level III. RECEIVING OBJECTIVES

1. The student will return 3 drive serves from Placement Area A by hitting the shuttle in such a way that it lands in the opponent's left court alley, between the net and the service line.
2. The student will return 3 drive serves from Placement Area D by hitting the shuttle in such a way that it lands in the opponent's right court alley between the net and the service line.
3. The student will assume a doubles receiving position in the right receiving court, then return the serve that passes over the server's head, then move to a side-by-side doubles court coverage position. This will be repeated 4 times from the right court, varying the direction of each return.

4. The student will assume a doubles receiving position in the left receiving court, then return the serve with a shot that passes over the net top and lands between the net and the service line, then move to a side-by-side doubles court coverage position. This will be repeated 4 times from the left court, varying the direction of each return.

INSTRUCTIONAL ACTIVITIES

- *1. Attend the teaching session by the instructor. (See attached teaching schedule.)
2. Read pages 50-51 in BADMINTON by Johnson.
3. Read pages 105-106 in INDIVIDUAL SPORTS by Hale.
4. Read pages 76-78 in BADMINTON by Poole.
5. Read page 28 in BADMINTON by Pelton.
6. Ask a classmate for assistance.
7. Review wall charts.

APPENDIX O
FLICK SERVE AND RECEIVING THE FLICK SERVE

The flick serve, like the drive serve, is used occasionally as a surprise serve. It is used more frequently in doubles than in singles.

The objective of both the drive and the flick serves is to send the shuttle past the receiver before he/she can react effectively. The trajectory should send the shuttle just over the receiver's reach, and land near the back of the doubles service court.

The serve is an effective serve to use when the receiver anticipates a short serve and has shifted his/her body weight forward. It is also an effective serve to use when the server notices that the receiver's body weight is decidedly forward in order to rush the short serve. The most effective placement for the flick serve is just barely over the receiver's head, but out of his/her reach. This height gives the receiver a short time to move back but not enough time to execute a good return. One danger in executing this serve is that if the trajectory is too low, the receiver will be able to execute a smash return.

Like the drive serve, the stance and initial appearances of the serve are identical to the short serve. The first difference between the flick and the other serves comes just prior to and during the contact point. Just before contacting the shuttle on the serve, the elbow extends and the

wrist flexes rapidly. This rapid movement of the wrist accelerates the racket head.

Another difference between the flick serve and the short serve is that because the desired trajectory is higher for the flick serve, the direction of the swing is different. The racket face, just after contact should be pointing high and directly toward a mark just inside the back serving court boundary on the receiver's side of the net. The follow-through continues upward in this direction until the elbow bends and the racket hand, at the conclusion of the stroke, is even with the left shoulder (right handed player), with the racket pointing diagonally upward toward the left rear of the player's court.

This serve is considered to be of intermediate or advanced level of difficulty. Better players should practice to make sure that the short serve, drive serve, and flick serve are identical up to a point just prior to the actual contacting of the shuttle. The deception of the type of serve to be delivered, until the last possible moment, gives a decided advantage to the server, and often times forces the opponent into a weak return, thereby allowing the serving team to regain the offensive.

NOTE: Because of the difficulty of this serve, this section is optional for all students, except those contracting for an A, in which case it is required.

THE MODULE WILL BE RECORDED AS COMPLETE/INCOMPLETE BY THE INSTRUCTOR.

PREREQUISITES: Completion of at least all level II objectives in the following sections: doubles short serve, doubles long serve, and drive serve.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student or the instructor.

LEVEL OBJECTIVES:

Level III. OBJECTIVES

1. The student will serve 5 legal flick serves from the right serving court into the legal boundaries of the right receiving court. LEARNING ALTERNATIVE 1 A.
2. The student will serve 5 legal flick serves from the left serving court into the legal boundaries of the left receiving court. LEARNING ALTERNATIVE 2 A.
- *3. The student will, from his/her right court, based upon the receiver's court position, serve either a flick or short serve, then move to the correct court coverage position and attempt a return of the receiver's return of service. This procedure should be repeated until at least 3 of each type of serve has been successfully executed. LEARNING ALTERNATIVE 3 A.
- *4. The student will, from his/her left court, based upon the receiver's court position, serve either a flick or short serve, then following the serve move to the correct court coverage position and attempt a return of the receiver's return of service.

Level III. RECIEVING OBJECTIVES

1. The student will assume a doubles receiving position in the right court and return 5 flick serves by contacting the shuttle above his/her head and hitting it so that it lands in the back alley on the server's side of the net.
2. The student will assume a doubles receiving position in the left court and return 5 flick serves by contacting the shuttle above his/her head and hitting it so that it lands in the back alley on the server's side of the net.

- *3. The student will assume a doubles receiving position in the right court, then return the server's serve, each time choosing the most advantageous return shot based upon the type of serve delivered, and his/her court position. Following the return of service, the receiver should move to the appropriate type of court coverage position.
- *4. The student will assume a doubles receiving position in the left court, then return the server's serve, each time choosing the most advantageous return shot based upon the type of serve delivered, and his/her court position. Following the return of serve, the receiver should move to the appropriate court coverage position.

NOTE: Serving Objective 3 and Receiving Objective 3 should be fulfilled together; and Serving Objective 4 and Receiving Objective 5 should be fulfilled together.

INSTRUCTIONAL ACTIVITIES:

- *1. Attend the teaching session conducted by the instructor. (See attached schedule.)
- 2. Ask a classmate to observe you and offer corrective suggestions.
- 3. Review the wall charts.
- 4. Read page 105 in INDIVIDUAL SPORTS by Hale.

POST-ASSESSMENT: The student, upon completion of the level objectives should come to the instructor and request a post-evaluation.

REMEDIATION: If the student fails to successfully complete the post-evaluation, the instructor will recommend a program for correction of errors. After the student has corrected the errors, then he/she comes to the instructor and requests a second post-assessment.

LEARNING ALTERNATIVES

- 1 A Review the mechanics of the flick serve once again. The fault may be that the mechanics in the beginning of your stroke are not identical to the short and drive serves, thereby not deceiving your opponent. Concentrate on making the beginning mechanics as identical as possible.

If you are unable to execute the stroke, then once again review the basic mechanics of the stroke. Go through each part isolated before putting the entire stroke pattern together.

1. The student will practice mimetically the stroke pattern until he/she is confident the error(s) have been corrected.
2. The student will mimetically demonstrate, to a classmate, the stroke pattern 5 times.
3. The student will serve 10 flick serves into the right receiving court.

RE-ENTER THE LEVEL OBJECTIVES.

2 A If the shuttle is not going high enough to clear your opponent's head, then the angle of your racket is possibly not high enough, or you are not flexing your wrist fast enough to send the shuttle high and deep.

1. The student will mimetically practice the stroke pattern, making sure that just prior to the contact point, the racket face is swung toward a spot about 12 feet and a foot within the back boundary of the service court.
2. The student will mimetically demonstrate the stroke pattern to a classmate.
3. The student will mimetically practice the stroke pattern being certain that just prior to the contact point the elbow straightens and the wrist flexes rapidly.
4. The student will mimetically demonstrate the stroke pattern to a classmate.
5. The student will serve 10 flick serves into the left receiving court.

RE-ENTER THE LEVEL OBJECTIVES.

APPENDIX P

BACKHAND SERVE

The backhand serve, until recently, has not been used to any great extent by United States players. It has, however, been used for years by players from Malaysia and Indonesia.

The backhand serve may be delivered as a low, flat serve, or flicked in order to send it deeper into the opponent's court. This type of serve is used predominantly in doubles play because most backhand serves are short serves, which is the most common type of serve used in doubles, and because of the shortened service court for long serves.

When executing the backhand serve the player begins by facing the net, and stands with the right foot (right handed player) forward. The racket may be held with a different grip than for any of the other serves, or the same forehand grip may be used. Because of the serving rules, the handle of the racket is held at chest height, with the bottom of the handle pointing up toward the ceiling. Because of the unusual position of holding the racket, the shuttle is held in front of and relatively close to the body. By holding the shuttle in front of the body instead of at the side as for the forehand serves, the beginning position of the shuttle is slightly higher. This height is an advantage to the server in that it allows him/her to contact the shuttle in a flatter arc, thereby giving the shuttle a flatter trajectory.

This flatter trajectory, for the most part, keeps the shuttle relatively close to the net, and does not allow the receiver to push or smash the return of service.

Another advantage to this type of serve is the psychological aspect. Because of the uniqueness of the serve, often times the receiver tends to watch the server's motions rather than the shuttle.

A disadvantage to using the backhand serve is that immediately after contacting the shuttle, the server must return the racket to the correct grip. If the server is slow in correcting the grip, he/she will not be ready to effectively continue play.

When the receiver notices that the server has not been quick in adjusting the position of the racket, the return should be directly back to the server. By hitting the shuttle back to the server, you have caught him/her in an off-guard position and he/she will probably not be able to hit the shuttle.

The backhand serve is considered to be an intermediate stroke, and requires practice in order to be effective. Beginners usually will not select to use this type of serve in a competitive situation.

NOTE: THIS IS AN OPTIONAL MODULE FOR ALL STUDENTS, EXCEPT FOR THOSE CONTRACTING FOR AN A.

THIS SECTION WILL BE RECORDED AS COMPLETE/INCOMPLETE BY THE INSTRUCTOR.

PREREQUISITES: Completion of at least all Level I objectives in the following sections: doubles short serve, singles short serve, doubles long serve and flick serve.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student or the instructor.

LEVEL OBJECTIVES:

SERVING POSITION:

1. The player should stand close to the center line, on their respective side of the court, and close to the service line.
2. The same foot as the racket hand is forward, with the other foot behind in a comfortable stride. The back foot and leg has to be far enough away from the front foot so that the backswing prior to the serve is not impaired.
3. The body weight, prior to the serve, should be slightly forward.

Level Objectives.

1. The student will backhand serve 5 legal short doubles serves to the right receiving court. LEARNING ALTERNATIVE--READ BASIC MECHANICS OF THE BACKHAND SERVE IN BADMINTON BY JOHNSON.
2. The student will backhand 5 legal doubles short serves to the left receiving court.
3. The student will backhand serve 5 flick serves to the back third of the doubles receiving court, from the right serving court.
4. The student will backhand serve 5 flick serves to the back third of the doubles receiving court, from the left serving court.

INSTRUCTIONAL ACTIVITIES:

- *1. Attend the teaching session by the instructor. (See attached schedule.)

2. Ask a classmate to observe you and offer corrective suggestions.
3. Read pages 54-55 in BADMINTON by Burris and Olson.
4. Read page 13 in BADMINTON by Bloss and Brown.
5. Read pages 32-34 in BADMINTON by Johnson.
6. Review film of AIAW National Badminton Championship, doubles finals match.

POST-ASSESSMENT: The instructor will ask to see both a backhand short serve and a backhand flick serve demonstrated by the student.

REMEDIATION: If the student fails the post-assessment, the instructor will offer a program to assist the student in overcoming weaknesses and/or deficiencies. The instructor may suggest that the student advance to another module and return to this section at a later time.

APPENDIX Q
FOREHAND OVERHEAD SHOTS
INTRODUCTION

The following shots are considered by this author to be forehand overhead shots: (1) overhead clear, which may be attacking or defensive, (2) smash, and (3) overhead drop, which may be floating or quick. The round-the-head shots are considered as a separate category of shots.

Forehand overhead shots refer to those shots in which the shuttle is contacted above the player's head, on the racket or dominant side of the body. The shots can be executed from any point on the court, and they generally are considered to be the power shots. As the shuttle is coming toward the player, he/she has the choice of executing any of the above mentioned shots. The gross movements in the beginning of all three strokes are identical; the differences lie in the contact point, the angle of the racket face, and the amount of force imparted to the shuttle. For purposes of deception, the backswing for all the overhead strokes should be identical.

Since the gross movements in the beginning for all shots are identical, the player has a strategic advantage over his/her opponent. A player, before hitting the shuttle, should choose the most advantageous shot, and then attempt to execute it effectively.

In order for a badminton player to be an effective competitor, he/she must be able to execute the power shots. They are fundamental, not only for high level competitive play, but also for a player who plays recreationally. The court position of the player is one of the factors which plays a large part in the choice as to which shot to execute.

It is to the player's advantage to reach high and contact the shuttle as high as can be comfortably reached. Whatever type of shot the player decides to use, high oncoming shuttle should always be played with an overhead stroke, preferably on the forehand side, rather than with underhand or drive shots.

FOREHAND OVERHEAD CLEARS

The two types of forehand overhead clears are--defensive and attacking. The attacking clear is sometimes referred to as the offensive clear rather than the the attacking clear. The defensive clear, which is predominantly used in singles is higher and deeper than the attacking clear.

It is imperative that a singles player who wishes to play competitively be able to execute the overhead clears. The clears are powerful and forceful strokes that travel a great distance in the air.

When playing badminton you should adjust your court position according to the flight of the shuttle. When the flight is high, you should move quickly underneath the shuttle, but continually watching it, so as to present an attacking threat. Overhead shots are must more powerful than underhand shots, or shots taken to the side of the body. The overhead shots are considered offensive shots, even though the name defensive clearly infers a contrasting belief.

Johnson states the following regarding the values in using an overhead shot whenever possible rather than an underhand shot:

Attacking strategy is usually a winning strategy. Not only do overhead strokes inherently have an offensive threat but they also require less energy to move your opponent around his court. If

you try to hit an underhand clear from the back line to your opponent's back line, the resulting shot will probably result in a high midcourt smash set-up. In order to hit a deep underhand clear from the back line, you must both raise the shuttle against gravity and move to the shuttle forward against air resistance. An overhead clear requires less effort than an underhand clear from the same point because the overhead stroke is generated from near the desired vertical flight trajectory. For example, an average adult male will meet the shuttle 8 1/2 feet from the floor, raising the shuttle an additional 5 to 10 feet to clear the opponent (Johnson, 1969, p. 35).

The desired trajectory of a defensive clear is high over the center of the court, and lands deep in the back portion of the opponents' court, the closer to the baseline the better. The values of the shot are: (1) it forces the opponent to the back of his/her court; (2) if he/she is not a strong player, the return of the clear will probably be weak and not well-placed; (3) it gives the hitter time to recover to a good court position after being drawn out of position by a strategically placed shot from the opponent. The shot should be seldom used in doubles because it allows the opponent to hit down on the shuttle, plus nothing is gained in doubles by moving one player deep in the backcourt because his/her partner is there to cover the net area.

A singles player should be able to clear the shuttle from baseline to baseline, a distance of 44 feet, and at a height, when the shuttle reaches its maximum distance above the court surface, of 20 feet. The more height and distance the shuttle travels, the more time you have to regain your

court position. The force required to successfully execute this shot is one of the greatest in badminton.

The attacking clear is primarily used to put the shuttle over the opponent's head, out of his/her reach, but not high enough to allow them to recover their court position and return with a well-placed shot. It is an advantageous shot to use in singles when your opponent is moving forward toward the net, or is caught at the net after moving in to return a short shot close to the net.

The attacking clear has a flatter arc than the defensive clear, consequently it has less downward angle. Less power is required to hit the attacking clear because without the high flight pattern, there is less distance for the shuttle to travel.

The speed, or pace of the two clears, is different. The attacking clear is faster than the defensive clear. Because it is lower, and possibly not as deep, the opponent must be drawn out of the center court position before it can be used successfully.

PREREQUISITES: The student must have knowledge of the proper mechanics of execution for both defensive and attacking clears. The student must know and be able to explain the differences between the two clears, and why and when they are most effectively used.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: If asked by the instructor, the student will be able to orally explain the differences between the two clears, and their uses.

LEVEL OBJECTIVES:

Do not begin working on any objectives until you have a thorough understanding of how to execute both the defensive and the attacking clears. You may need to review one or several of the Learning Alternatives. The best sources for you to review are noted by an asterisk(*) .

Level I. OBJECTIVES

1. The student, if asked, will demonstrate to a classmate the correct body action for the most efficient execution for both the defensive and attacking clears. LEARNING ALTERNATIVE--REVIEW SUGGESTED SOURCES.
- *2. The student will hit 6 out of 10 defensive clears, standing behind a line 6 feet from the service line, on his/her side of the net, that pass over a rope tied 12 feet above and parallel to the court surface, and fall 4 feet from the baseline on the opposite side of the net. LEARNING ALTERNATIVE 2 A and/or 2 D.
- *3. The student, with a partner, will hit 10 consecutive defensive clears that go to the back portion of the court.

NOTE: IN ACCOMPLISHING OBJECTIVE NUMBER 2, THE STUDENT MAY TOSS THE SHUTTLE UP TO HIMSELF/HERSELF, OR HAVE A CLASSMATE SET IT UP FOR THE HIT.

4. The student will, from a stationary position, receive a shuttle at midcourt, and hit 5 attacking clears that pass over a rope tied 8 feet above the court surface and land within 3 feet of the opponent's baseline.

Level II. OBJECTIVES

1. The student will, by using a defensive clear, and standing behind a line 9 feet from the net, hit 6 out of 10 shuttles that pass over a rope 12 feet above and parallel to the court surface, and fall 4 feet from the baseline. LEARNING ALTERNATIVE 2 A and 2 D.

- *2. The student will assume a ready position for singles play, move to hit 3 out of 5 oncoming shuttles with a defensive clear, that land in the opponent's right court, then following the shot move to a singles ready position. NOTE: If left handed, return the clear to the opponent's left court.
- *3. The student will assume a ready position for singles play, move to hit 3 out of 5 oncoming shuttles with a defensive clear, that land in the opponent's left court, then following the shot move to a singles ready position. NOTE: If left handed, return the clear to the opponent's right court.
- *4. The student with a partner will hit 15 consecutive defensive clears that travel at least 20 feet high over the center of the court surface and land within 4 feet of each sides' baseline.
- *5. The student will, from a stationary position, receive a shuttle at midcourt, and hit 3 out of 5 attacking clears that pass over a rope 8 feet parallel to and above the court surface and land within 5 feet of the opponent's baseline.

Level III. OBJECTIVES

- 1. The student will hit 6 out of 10 defensive clears, standing behind a line 12 feet from the net, that pass over a rope 12 feet above and parallel to the court surface, that fall 4 feet from the baseline on the opponent's side of the court. LEARNING ALTERNATIVE 2 A, 2 D.
- *2. The student will assume a singles receiving position in the right court, move to a position to hit 3 out of 5 oncoming shuttles with a defensive forehand clear to the server's right court, then following each hit, move to an altered ready position. See explanation following objectives.
- *3. The student will assume a singles receiving position in the left court, move to a position to hit 3 out of 5 oncoming shuttles with a defensive forehand clear to the server's left court, then following each hit, move to an altered ready position.
- 4. The student with a partner will hit 20 consecutive defensive clears that travel at least 20 feet high over the center of the court and land within 5 feet of each sides' baseline.

5. The student will, from a stationary position, receive a shuttle at midcourt, and hit 3 out of 5 attacking clears that pass over a rope 8 feet parallel to and above the court surface, and land within 4 feet of the opponent's baseline.

ALTERED READY POSITION

If the defensive clear is placed high and deep to the forehand side, the player who hit the shuttle should assume a ready position that is more in line with the flight of the shuttle. The player should come half-way between the net and the baseline, but stand approximately one foot from the center line in line with the flight.

The anticipated and probable return of the clear is directly back from the hitter. By assuming an altered ready position in line with the flight, the player will be in the most advantageous position for the return, and also when moving to an altered position to your left (right handed player), the backhand or weaker area has been reduced.

If when playing, you notice the player adjusting his/her court position too much, then the shot to use is a cross-court away from the player. However, this takes a stronger and more proficient player to execute this type of a shot.

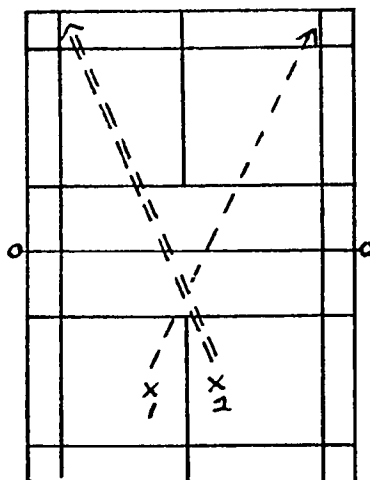


Figure 16.

X-1--shuttle has been hit into opponent's right court (see arrow with double lines) and altered position is in direction of the shuttle flight.

X-2--shuttle has been hit into opponent's left court (see arrow with single line) and altered position is in direction of the shuttle flight.

LEARNING ALTERNATIVES:

2 A In executing the clear shots, a common error is that the shuttle goes high, but not deep. The most common cause of this error is that the player contacts the shuttle too much overhead, and the racket angle at the contact point is directly upward. When you hit the shuttle you should be looking at it while it is high in the air, but also when it is forward of you rather than directly over your head.

WORK THROUGH THE FOLLOWING OBJECTIVES. WHEN YOU HAVE COMPLETED ALL OF THE OBJECTIVES, EITHER RE-ENTER THE MODULE, LEVEL I OBJECTIVE NUMBER 2, OR GO DIRECTLY TO LEARNING ALTERNATIVE 2 B.

1. The student will review the mechanical principles utilized in executing the overhead clears. See suggested sources.
2. The student will ask a classmate to observe him/her mimetically demonstrating the strokes, stopping at the contact point, and correcting any errors. Repeat this until you consistently can execute the entire stroking pattern correctly. LEARNING ALTERNATIVE 2 B.
3. The student will stand on his/her service line, and defensively clear 8 shuttles over the 12 foot rope.
4. The student will stand 2 feet behind his/her service line and clear 8 shuttles over the 12 foot rope.

2 B A second probably cause of the problem of executing the clears is that the swing is too late. The player should contact the shuttle approximately 6 feet in front of the body. Players tend to wait for the shuttle to come to them rather than reaching out to hit or contact it while high in the air, but also in front of the body.

GO TO LEARNING ALTERNATIVE 2 D AND COMPLETE ALL OF THE OBJECTIVES STATED, THEN RETURN TO LEARNING ALTERNATIVE 2 A, AND BEGIN WORKING ON OBJECTIVE NUMBER 2 THROUGH 4, AFTER WHICH FOLLOW THE OBJECTIVES STATED IN LEARNING ALTERNATIVE 2 A.

2 C A common error in executing the overhead clears is the failure of the student to mechanically execute the stroke properly. The use of all body parts is mandatory in order to effectively execute the clear shots.

1. The student will read pages 56-59 and pages 34-36 in BADMINTON by Johnson.
2. The student will mimetically demonstrate the stroke pattern, stopping at the contact point and correcting any errors, to a classmate. This process should be repeated until you are certain the error has corrected.
3. The student will hit 8 defensive clear shots that travel at least from midcourt on his/her side of the net to midcourt on the opponent's side of the court.

GO TO LEARNING ALTERNATIVE 2 A, AND COMPLETE OBJECTIVES 2-4. AFTER YOU HAVE SUCCESSFULLY COMPLETED THE OBJECTIVES, FOLLOW THE INSTRUCTIONS STATED.

2 D Sometimes when executing the clear shots the shuttle travels deep into the opponent's court, but does not go high enough into the air. When this occurs, the shot is not effective, and the purpose behind executing the clear is lost. When this problem occurs, the source may be that the contact point is too late, or in other words, you are not contacting the shuttle high enough above you head and/or far enough in front of your body. In order to get maximum height from the shuttle, contact it as high as possible, rather than letting it drop too low. By contacting it as high as possible in the air, the player is effectively utilizing the height the shuttle already has, rather than letting it drop, to only have to hit it high up again.

1. The student will read pages 56-59 and 34-38 in BADMINTON by Johnson.
2. The student will mimetically demonstrate the swing to a classmate, stopping at the contact point and correcting any errors in the stroke pattern. This should be repeated until the student feels confident the error(s) have been corrected.
3. The student will hit 5 defensive clears 6 feet in front of his/her body and as high as possible above his/her head.

4. The student will hit 5 defensive clears, standing 2 feet behind his/her service line, with the shuttle passing over a rope 12 feet above and parallel to the court surface on the opponent's side of the court. See objective number 3 above for proper stroke execution.
5. The student will step one step forward, with the non-racket foot, prior to hitting the shuttle, standing 4 feet behind the service line, and clear 5 shuttles over the 12 foot rope.

AFTER YOU HAVE SUCCESSFULLY COMPLETED THE ABOVE OBJECTIVES, RE-ENTER LEVEL I OBJECTIVES AND BEGIN WORKING ON OBJECTIVE NUMBER 2.

LEARNING ALTERNATIVES:

1. Attend teaching session by instructor. (See attached schedule.)
2. Ask a classmate for assistance.
3. Review wall charts of defensive and attacking clears.
- *4. Review loop films.
- *5. Read pages 56-59 in BADMINTON by Johnson.
6. Read pages 14-16 in BADMINTON by the Athletic Institute.
7. Read pages 14-17 in BADMINTON by Bloss and Brown.
8. Read pages 22-24 in BADMINTON by Burris and Olson.
- *9. Read pages 112-116 in INDIVIDUAL SPORTS by Hale.
10. Read pages 23-26 in BADMINTON by Pelton.
11. Read pages 25-29 in BADMINTON by Poole.
12. Read pages 89-90 in INDIVIDUAL SPORTS FOR WOMEN by Broer, et al.
13. Review the AIAW National Badminton Championship films.

14. Practice at Intramural Badminton and/or arranged extra practice times.

POST-ASSESSMENT: The student marks his/her own progress throughout the module. When the level objectives are completed, the student should come to the instructor and request a post-assessment. The instructor will rate the student on a 5-point rating scale on the execution and placement of both the attacking and defensive clears. The instructor may or may not request to have the student demonstrate competency on one or more of the level objectives.

The student must receive the following score, dependent upon the specified competency level in order to successfully complete the module:

Level I--2 points
Level II--3 points
Level III--5 points

If the student fails to successfully complete the post-assessment, a remediation program will be suggested by the instructor.

REMEDICATION: The instructor will suggest a program to overcome the student's deficiencies. The student may not continue to a higher level set of objectives until the post-assessment has been completed, but if he/she fulfills the stated prerequisites, he/she may proceed to another module.

FOREHAND OVERHEAD DROP SHOT

The drop shot has been covered in length in the preceding modules. The essence of the overhead drop is to hit the shuttle in such a manner that it falls on the opponent's side of the net, as close to the net as possible. There are two different types of overhead drop shots, the floating drop and the quick or direct drop shot. Whichever type of drop is used, deception is extremely important.

The drop shot can be executed from any area on the court, but is most commonly used when the player is in the back-court. It is an effective return of a long serve, and an effective return of a defensive clear.

PREREQUISITES: The student must have completed the forehand overhead clear and smash sections.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student or instructor.

LEVEL OBJECTIVES: All students complete the same objectives, no matter which level you have contracted for your final grade.

1. The student will return 5 overhead drop shots.
2. The student will assume a ready position for returning a long serve from the right receiving court, move back to hit each oncoming shuttle with an overhead drop that lands in the opponent's right court, between the net and the service line. This is to be repeated until the student has successfully hit 5 shots.
3. The student will assume a ready position for returning a long serve from the left receiving court, move back to hit each oncoming shuttle with an overhead drop that lands in the opponent's left court, between the net and the service line. This is to be repeated until the student has successfully hit 5 overhead shots into the proper area.

FOREHAND SMASH

The smash could perhaps be considered to be the ultimate of the attacking or offensive shots. It is a power stroke--one that is considered to be a point winner.

The trajectory is downward, and the shuttle is hit hard, thereby causing the shuttle velocity to be fast. The smash is most effective when hit between the midcourt and the net. The shuttle should be angled downward as sharply as possible.

Because of the amount of power needed to execute an effective smash, and because the body is off-balance at the conclusion of the smash, it is used more in doubles play than in singles. It is used in singles for a sure "put-away" shot, or as a change of pace return from a serve or a clear. It is used in doubles anytime the shuttle is hit high enough to allow the player to execute the shot.

The contact point for the smash is as high as possible, and slightly in front of the body. The racket face must be angled downward when the shuttle is contacted so that the shuttle will assume a downward flight pattern.

It is important that the player remember that the closer you are to the net when you smash, the more downward the angle will be on the opponent's side of the net.

PREREQUISITES: The student must have completed at least all of Level I Objectives in the Forehand Overhead Clear.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student.

LEVEL OBJECTIVES:

Level I. OBJECTIVES

1. The student will mimetically demonstrate to a classmate the mechanics of executing a smash.
2. The student will demonstrate to a classmate, alternating stroke patterns, for hitting an overhead clear and a smash, making certain that the backswing and preliminary movements are identical.
3. The student will assume a ready position 5 feet behind the service line, and hit 10 oncoming shuttles so that they angle sharply downward and land on the opponent's side of the net.

Level II. OBJECTIVES

1. The student will assume a ready position for singles play and hit 5 oncoming shuttles to the opponent's midcourt, on the forehand side.
2. The student will assume a ready position for singles play and hit 5 oncoming shuttles to the opponent's midcourt, on the backhand side.
3. The student will assume a ready position for singles play, and move to hit 5 shuttles with a smash, and following each smash, return to his/her ready court position.

Level III. OBJECTIVES

1. The student will assume a ready position for singles play and hit 5 oncoming shuttles to the opponent's midcourt on the forehand side.
2. The student will assume a ready position for singles play and hit 5 oncoming shuttles to the opponent's midcourt, on the backhand side.
3. The student will assume a ready position for singles play, and move to hit 5 shuttles with a smash, and following each smash advance toward the net, and smash the return shot from the opponent.

4. The student, with a partner, will complete the following pattern 5 times:

Player 1--Long Serve for singles to Right Court
Player 2--Overhead drop the return of serve
Player 1--Underhand clear the return of the drop
Player 2--Smash

INSTRUCTIONAL ACTIVITIES:

- *1. Attend the teaching session conducted by the instructor. (See attached schedule.)
- *2. Review the Smash loop film.
- *3. Read pages 66-68 in BADMINTON by Johnson.
4. Read pages 24-27 in BADMINTON by Burris and Olson.
5. Read pages 20-22 in BADMINTON by Bloss and Brown.
6. Read pages 116-117 in INDIVIDUAL SPORTS by Hale.
- *7. Ask instructor for assistance.

POST-ASSESSMENT: When the instructor has successfully completed the level objectives, he/she should come to the instructor and request a post-evaluation. The post-evaluation will consist of the student demonstrating the smash to the instructor. In order to complete the post-evaluation, the student must achieve the following point designation:

Level I--2 points on a 5 point scale
Level II--3 points on a 5 point scale
Level III--4 points on a 5 point scale

APPENDIX T

SINGLES AND DOUBLES GAME PLAY PLAYING EVALUATION

This module is scored and recorded differently than the preceeding modules. The student is required to participate in three singles games and three doubles games prior to being evaluated by the instructors in actual game play. The student must be rated in both doubles and singles play, and will be rated by two different instructors at the same time. The student must receive a certain designated percentage in the various categories in order to successfully complete this module. If the student does not successfully attain the necessary percentages, he/she will be referred to the necessary remedial activities.

PREREQUISITES: The student must have completed all of the skill development modules prior to entering this module. The student must have completed the rules test.

ESTIMATED TIME: Unknown.

PRE-ASSESSMENT: None unless requested by the student or the instructor.

LEVEL OBJECTIVES: The student must complete the module at his/her pre-designated level at which he/she has contracted for the course.

Level I. OBJECTIVES

1. The student will play three singles and three doubles games prior to being rated in each by the instructor.
2. The student will be rated by the instructors in a singles game, and receive the following percentages in the following categories:

50% Effective to Ineffective Serves; 50% Effective to Ineffective Return of Serves; 50% Effective Shots during Rally.

3. The student will be rated by the instructors in a doubles game, and receive the following percentages in the following categories:
50% Effective to Ineffective Serves; 50% Effective to Ineffective Return of Serves; 50% Effective Shots during Rally; a rating of 2 on a 5-point scale on the Effective Use of their declared Court Coverage Strategy.

Level II. OBJECTIVES

1. The student will play in three singles games and three doubles games prior to being rated in each by the instructor.
2. The student will be rated by the instructors in a singles game, and receive the following percentages in the following categories:
60% Effective to Ineffective Serves; 60% Effective to Ineffective Return of Serves; 60% Effective to Ineffective Shots Used during the Rally.
3. The student will be rated by the instructors in a doubles game, and receive the following percentages in the following categories:
60% Effective to Ineffective Serves; 60% Effective to Ineffective Return of Serves; 60% Effective to Ineffective Shots Used during the Rally; and a rating of 3 on a 5-point scale on the Effective Use of their Declared Court Coverage Strategy.

Level III. OBJECTIVES

1. The student will play three singles games and three doubles games prior to being rated in each by the instructor.
2. The student will be rated by the instructors in a singles game, and receive the following percentages in the following categories:
70% Effective to Ineffective Serves; 70% Effective to Ineffective Return of Serves; 70% Effective Use of Shots during Rally.

3. The student will be rated by the instructors in a doubles game, and receive the following percentages in the following categories:
70% Effective to Ineffective Serves; 70% Effective to Ineffective Return of Serves; 70% Effective Use of Shots during Rally; and a 5 on a 5-point scale on the Effective Use of their Declared Court Coverage Strategy.

POST-EVALUATION: Refer to Level Objectives.

REMEDICATION: If the student does not complete the post-evaluation, a program will be outlined and suggested by the instructor to assist the student in the correction of errors.

WRITTEN EXAMINATION
HISTORY OF BADMINTON

Directions: DO NOT WRITE ON THE TEST. If the answer is true, place a + in the correct blank on your answer sheet. If the answer is wholly or partly false, place an O in the correct blank in your answer sheet.

1. The history of the development of badminton as a sport is definite.
2. Badminton can only be played against persons of the same sex.
3. A badminton court, in total size, is smaller than a tennis court.
4. A well hit shuttle does not spin as it flies through the air.
5. The first Badminton Club was founded in Canada.
6. The date of the founding of the first Badminton Club was around 1873.
7. The original rules of play were drawn up in 1850.
8. There were two revisions of the rules of play.
9. The final revision was done in 1890, which do not differ greatly from our present rules.
10. Men's championships were originated prior to championship tournaments for women.
11. The first International Competition for men was conducted in the 1940's.
12. This competitive event is held every year.
13. The United States usually wins the Internationasl Competition for Men.
14. The first International Competition for women was conducted in the 1940's.
15. This competitive event is held yearly.

16. The United States team has often times won this tournament, including the first one.

Directions: Place the letter of the correct answer in the blank on your answer sheet. Several options may be correct, choose the best solution.

17. Most sport historians agree that badminton, as it is now played, developed from a similar game first played in:
1. Australia and New Zealand
 2. Japan and China
 3. China and Siam
 4. Malaysia and Canada
 5. Canada and the United States
18. The first badminton game was called:
1. badminton or racketball
 2. battledore or shuttlecock
 3. shuttlecock or racketball
 4. paddleball or badminton
19. After the origination of the first game of badminton, it was further developed in:
1. China
 2. Siam
 3. Malaysia
 4. India
20. The game referred to above was called:
1. Badminton
 2. Shuttlecock
 3. Battledore
 4. Poona
21. The shape of the first badminton courts were:
1. circular
 2. rectangular
 3. square
 4. hourglass
22. The American Badminton Association was formed in:
1. 1915
 2. 1931
 3. 1936
 4. 1945
 5. 1953
23. The International Badminton Federation was founded in:
1. 1900
 2. 1930
 3. 1934
 4. 1936
 5. 1940
24. The trophy vied for in the International Competition for Men is the:
1. Thomas Cup
 2. Uber Cup
 3. Davis Cup
 4. Johnson Cup
25. The trophy vied for in the International Competition for Women is the:
1. Thomas Cup
 2. Uber Cup
 3. Davis Cup
 4. Johnson Cup

WRITTEN EXAMINATION
CARE AND SELECTION OF EQUIPMENT

Directions: DO NOT WRITE ON THE TEST. If the answer is true, place a + in the correct blank on your answer sheet. If the answer is wholly or partly false, place an O in the correct blank on your answer sheet.

26. International rules specifically state the size, shape, and weight of the racket to be used in competitive play.
27. The racket consists of 6 major part.
28. The usual length of the racket is 36 inches.
29. The gut lamb twisted stringing is mostly used to string metal rackets.
30. Nylon shuttles are more expensive than feathered shuttles.
31. The average shuttle used for most heated courts is 40 grains.
32. A feathered shuttle is not as durable as a nylon shuttle.
33. Nylon, rather than feathered shuttles, are used for most competitive events.
34. Net should be white in color and topped with a white top band 3 inches in width.
35. It is imperative that in damp weather, metal rackets be kept in a racket press.
36. Grip size is important when selecting a racket.

Directions: Place the letter of the correct answer in the blank on your answer sheet. Several options may be correct, choose the best selection.

37. A common stringing tension for wooden rackets is:
1. 12 lbs. 2. 18 lbs. 3. 22 lbs. 4. 28 lbs.
38. A common stringing tension for metal rackets is:
1. 12 lbs. 2. 18 lbs. 3. 22 lbs. 4. 28 lbs.

39. If you were going to test a shuttle to determine correct pace in flight, you stand:
1. at the service line and hit it overhead so that it falls to the baseline of the opposite court.
 2. at the service line and hit it underhand so that it falls to the baseline of the opposite court.
 3. in a spot above one back boundary line and hit it underhand so that it falls in the back alley of the opposite court.
 4. in a spot above one back boundary line and hit it overhead so that it falls in the back alley of the opposite court.

WRITTEN EXAMINATION
PARTICIPATION VALUES

Directions: DO NOT WRITE ON THE TEST. If the answer is true, place a + in the correct blank on your answer sheet. If the answer is wholly or partly false, place an O in the correct blank on your answer sheet.

40. Social values cannot be gained through participation in badminton.
41. Fitness is not a primary concern, as badminton does not require a high degree of stamina and endurance of the performers.
42. Agility is not a concern in order to be a successful badminton player.
43. Playing badminton contributes to increase the physiological efficiency of the body.
44. Playing badminton can help a person relax by aiding in releasing of built-up tension.
45. Badminton can be called a medium for creative self-expression.
46. The game of badminton can add to the socializing process of the individual.

SHORT ANSWER: Name one physical, psychological, and social value that can be gained through participation in badminton.

BADMINTON RULES TEST

TRUE OR FALSE: Place your answer in the blank on the answer sheet. If the statement is partially or wholly false, answer it false. Use an O for false, and a + for true.

1. In doubles, the serving side wins the points when a let is called.
2. A player losing the toss, at the beginning of the match, has no choices.
3. In a third game of a doubles match, the players change ends when one team has scored eight points.
4. If when playing the net, you hit the net with the top of your racket before the bird hits the floor, a fault has been committed.
5. A women's doubles game when tied at 13 all is set for three points.
6. A women's singles game when tied at 10 all is set for two points.
7. A women's singles match consists of winning three out of five games.
8. The receiver's partner may stand in the receiving court, when her partner receives the serve.
9. The receiver's partner may legally strike a serve meant for her partner.
10. A player taps the bird with her racket and then hits it again to send it across the net. This is legal and play continues.
11. A fault made by either player of the serving side in doubles counts one point for the receiving side.
12. The serve is an overhead stroke that begins each play.
13. The serve is considered a defensive stroke.
14. The team that won the first game always serves first in the second game of a match.
15. In a singles game, the service is delivered from the right-hand court when the server's score is odd.

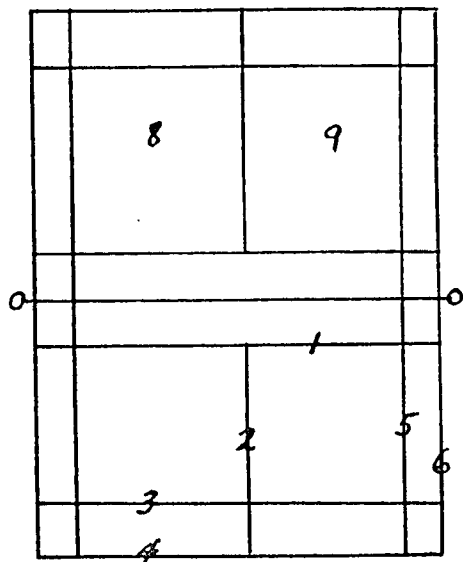
16. A player may legally reach over the net to hit the bird, as long as he does not touch the net.
17. It is legal for a player to contact the bird on his side of the net and then follow through over the top of the net providing he does not touch the net.
18. A serve, during the game, is deemed completed as soon as the shuttle crosses the net.

MULTIPLE CHOICE: Choose the best answer. Several may be correct, but choose the best. Answer the questions as they are written. Assume no conditions exist other than those stated. Unless otherwise stated player or team A is always serving.

19. The receiver swings at and misses a bird which then falls out-of-bounds. What happens?
 1. point for server
 2. service over
 3. let
 4. point for receiver
20. Preliminary movements of the server before serving results in:
 1. let
 2. point for server
 3. point for receiver
 4. fault-loss of serve
21. A smash hit by the server hits the line on his opponent's side:
 1. service over
 2. let
 3. point for server
 4. fault
22. If you set the score at 9 all, how many points do you set for?
 1. 3
 2. 2
 3. 5
 4. 4
23. Player A standing outside the court catches the bird which her opponent has hit and calls "out." What is the decision? Player B is serving.
 1. player B's point
 2. player A's point
 3. replay
24. In singles, the server's score is seven and he serves from the right court and wins the rally: This mistake is discovered before the next serve.
 1. point
 2. service over
 3. let
 4. legal
25. The receiver unsuccessfully returns a serve he claims was served before he was ready:
 1. point
 2. service over
 3. let
 4. legal

26. The score is 5-4 for the server in a singles game, from which court should the serve be made?
1. left court
 2. right court
 3. either court
 4. impossible to determine
27. The receiver steps out-of-bounds to meet the service. Her racket barely touches the shuttle before it falls to the court out-of-bounds. What is the decision?
1. server loses the serve
 2. fault for server
 3. point for server
 4. let
28. In a singles game the serve is always delivered from where?
1. the right hand court when the server's score is even
 2. the left hand court when the opponent's score is odd
 3. the right hand court when the player's combined score is even
 4. the right hand court at the beginning of a player's term of service regardless of the score
29. Which of the following scores represents a completed match for women's singles?
1. 11-9, 3-11
 2. 12-11, 10-8
 3. 11-3, 9-11, 11-1
 4. 11-2, 7-11, 0-7
30. Team B serves first in the second game of a match. Which member of the team should serve first?
1. either player
 2. the player who was serving last in the previous game
 3. the player who would have served next in the previous game
 4. the player who finished the previous game in the right hand court
31. Whose score should be called first?
1. highest
 2. lowest
 3. receiver's
 4. server's
32. The receiver in a doubles game commits a fault. The score which was 5-9 becomes what?
1. 5-10
 2. 6-9
 3. 10-6
 4. 9-6
33. In singles play the server changes serving courts:
1. after each inning
 2. after each points has been scored while she serves
 3. immediately after hitting the shuttle
 4. after the game
34. During a rally in doubles, Player A hits the shuttle so that it hits the top of the net and drops to the floor of Team B's court. What is the decision?

1. point for Team A
 2. point for Team B
 3. replay the point
 4. Team A loses the serve
35. When the score is tied at 14 all, who may set the score?
1. the receiving players
 2. the serving players
 3. the side which reached 14 first
 4. the side which just scored the point
36. If a player attempting a serve misses the shuttle completely, he may:
1. not try to serve again
 2. try once more to serve
 3. try two more times to serve
 4. try an unlimited number of times providing he does not touch the bird
37. The following is a definition of what term: "the shuttle rests momentarily on the racket during the execution of the stroke."
- | | |
|----------|---------------|
| 1. let | 3. double hit |
| 2. carry | 4. wood shot |



NAME _____

LEVEL NUMBER _____

1. What is the name of the line recorded as one (1) above?

2. What is the name of the line recorded as two (2) above?

3. What is the name of the line recorded as three (3) above?

4. What is the name of the line recorded as four (4) above?

5. Which number represents the right receiving court? _____
6. Which number represents the left receiving court? _____
7. Which numbers comprise the boundaries for a doubles receiving court? _____
8. Which numbers comprise the boundaries for a singles receiving court? _____
9. What is the distance between 3 and 4? _____
10. What is the distance between 5 and 6? _____
11. What is the distance between the net and number 1? _____
12. What is the height of the net at the poles? _____
13. The total width of the court is _____.
14. The total length of the court is _____.